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ABSTRACT

The question of how a state can attract, prepare, license, and retain an adequate number of competent teachers is addressed in this publication. An introductory statement considers the goals of public school education as well as present and future issues and concerns of educators. Recommendations made in six chapters focus on the role of the state education agency in educational improvement. In the first chapter, global and national perspectives on education are briefly assessed prior to an indepth discussion of issues facing the Northeast Region, which comprises six New England states and New York state. The second chapter discusses research findings on the characteristics of the competent teacher. The following four chapters consider, from the point of view of a state education agency's reponsibilities, the problems of attracting, preparing, licensing, and retaining qualified teachers. In the concluding statement, future activities of the Northeast Regional Exchange which may be of assistance to the state departments of education they serve are discussed. A bibliography is included. (JD)

CURRENT ISSUES IN TEACHER EDUCATION:

From A State Perspective

Prepared for the

Northeast Regional Exchange, Inc.
101 Mill Road, Chelmsford, MA. 01824
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December, 1982

By
Theodore E. Andrews

THE NORTHEAST REGIONAL EXCHANGE, INC.

The Northeast Regional Exchange, Inc. (NEREX, Inc.), a private, not-for-profit corporation, is a service agency that promotes educational equity and improvement. NEREX, Inc. coordinates resources and sharing of information among the seven State Departments of Education in the Northeast based on an established set of state and regional priorities. Through NEREX, Inc. states are able to expand their available resource base and work through regional sharing efforts toward program improvement in local school districts and other educational institutions. The Northeast Regional Exchange, Inc. is governed by a Board of Directors that includes the seven Chief State School Officers from the Northeast and eight representatives from a wide variety of education constituency groups in the region.

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FOREWORD

The Northeast Regional Exchange, Inc., is pleased to present Current Issues in Teacher Education: From a State Perspective. The report has been developed for two purposes:

1. to provide Northeastern states with a review of the crucial issues in teacher education from a state perspective, and

2. to provide the Northeast Regional Exchange (NEREX, Inc.) with an analysis of those issues that have regional implications.

The Staff and Board of Directors of the Northeast Regional Exchange, have drawn upon the expertise and knowledge of many people in preparing the report. The Board of Directors appreciates the work of the author, Theodore E. Andrews. He has very ably worked with the NEREX staff and Board in developing a paper relevant to the Northeastern audience.

The initial identification of issues, resources and state specific references was greatly assisted by those participating in a NEREX planning meeting on teaching in the winter of 1982. Planning group members and other persons from the region have assisted by reviewing preliminary drafts. In particular, the Board thanks:

CT: Sigmund Abeles and Mark Shibles; MA: Kevin T. Andrews, James Case, Alan Doyle, William Lewis, Richard McCann, Betty Roberts and Pat Whelan; ME: David Silvernail, Debra Smith, Caroline Sturtevant and Mavourneen Thompson; NH: Paul Collins and George Lewis; NY: Vincent Gazzetta; RI: Edward L. Dambruch, Marianne Martin and Anne Prosser; VT: Henry Bissex; NEREX staff: Douglas S. Fleming.

J. Lynn Griesemer

Executive Director

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Introduction

In 1980-1981, 10,706,000 public and private school students attended schools in states served by the Northeast Regional Exchange (NEREX). Approximately 450,954 teachers served these pupils.[1] Improving the quality of this teaching force, present and future, is of primary importance to the future of the region and of the nation.

The study of "teacher education" as used in this report includes the broad spectrum of issues related to teacher preparation and staff development. The specific problem related to teacher education that will be analyzed is:

- How can a state attract, prepare, license, and retain (and continuously develop) an adequate supply of teachers who can facilitate the achievement of appropriate learner outcomes in students?

This problem statement has been developed after a careful analysis of the concerns expressed by educators throughout the Northeastern region: the six New England states and New York, the states that constitute the membership of the Northeast Regional Exchange. It is recognized that some aspects of this problem are more acute than others; developing the technological capabilities needed by teachers and school students is one example.

The analysis of teacher education issues in this report is based upon the following assumptions.

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[1]Nancy B. Dearman and Valena White Plisko, ed., The Condition of Education, 1982 Edition, (Washington, D. C.: National Center for Education Statistics, U.S. Department of Education, U.S. Government Printing Office), pp. 47-48.

First: Public schools are only a reflection (a subset) of the changing nature of society and the world at large.

Within the past few years, Americans have endured energy crises, recognized that conservation should be a concern of everyone, experienced an economic decline unlike anything people under 40 years of age can remember, and seen a Third World develop which neither accepts nor necessarily appreciates the American commitment to democracy and capitalism. As it is true that teacher education is a subset of the nation's total educational system, it is also true that the educational system is a subset of the country's and world's political systems. The impact that changing political systems have on the educational system must be understood, appreciated, and anticipated.

Second: The goal of the American educational system is the education of its children; teacher education is a means to that end.

> If all our children were to be brought under benignant influences of such teachers as the State can supply from the age of four years to that of sixteen, and for ten months in each year, ninety-nine in every hundred of them can be rescued from uncharitableness, from falsehood, from cupidity, licentiousness, violence and fraud and reared to the permanence of all duties, and the practice of all the kindness and courtesies of domestic and social life.[2]
>
> Horace Mann

Individual states support and regulate public and private school systems in order to meet explicit or implicit societal goals. States and school districts generally expect schools to produce literate adults who understand and participate in governmental decisions and who are also productive workers in whatever careers they choose. It is the gap between society's expectations

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[2]Ellen Goodman, "The 3 R's Plus," The Washington Post, September 7, 1982, p. A19.

and the growing criticisms of America's schools -- declining test scores, increasing outbreaks of violence, drug and alcohol problems among teenagers and even younger children, increased school taxes, etc. -- that have caused much of the criticism directed at teachers. Many people believe that if teachers were better prepared, more competent, more dedicated, the schools' problems would disappear. That is simply not true. Some of the perceived problems of America's public schools would be eliminated if all teachers were competent, gifted, and dedicated, but only some. Citizens should be wary of assigning cause-and-effect results directly to the actions of teachers. An assumption upon which this report is based is that while improvements in teacher education are needed, they will not resolve all of the criticisms directed at the public schools. Efforts to improve teacher education policies then become only one in a series of efforts designed to improve the overall quality of schooling. Ellen Goodman discussed the value conflicts Americans feel about their schools in a recent column, "But there is much less certainty about 'character,' much less agreement about national values. In the midst of change we argue about whether our children should accept or question authority, we argue about whether sex is a sin or a pleasure, we argue about whether the Bible is truth or literature, we argue about whether the state of the family should control the access to children's beliefs."[3] Teacher education programs were not established to resolve these value conflicts.

Third: Issues in teacher education must be considered from two perspectives; what are the present concerns and what problems can be anticipated in the near future -- in 10 to 20 years?

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[3]Ibid.

Although the major focus of this report is on current issues, potential future problems cannot be ignored. Given the rapid rise in technology, for example, it is evident that school curricula may change more in the next 10 years than they have in the past 30. What impact such changes will have on teacher education has not been widely considered. An analysis of the shortage of math and science teachers is included in this report (a present issue), but discussions should begin now on such future issues (or are they present?) as: Should a certificate for a "computer teacher" be developed? What should the preparation requirements be? How soon will the schools need trained and competent teachers in computer education? How soon can the states develop systems to meet this challenge? Or, will the computer make the American classroom obsolete?

Fourth: A number of agencies have varying responsibilities for teacher education; colleges and universities, the state education agency, and the profession itself.

As the issues are discussed in this report and recommendations made, it is important to recognize that the various agencies have differing major responsibilities. The recommendations in this paper focus on the role of the state education agency. Given the present circumstances, what actions should the state education agency be considering? Also the final chapter will consider services that NEREX might offer to address the issues related to teacher education.

Fifth: Decisions about teacher education should be based upon data.

In the past too many decisions related to teacher education have been made on the basis of "best opinion" or political considerations. While these forms of decision-making will continue to be used, significant amounts of data

are now available and should be used. The following recommendations in this report are based upon best opinion and political considerations and the available data.

Sixth: States need to recognize that present institutions and policies may have become obsolete.

For example, every problem related to teacher education or schools has evolved out of the presently existing systems. Solving these problems may require difficult decisions that will change or eliminate long-standing policies. Research findings indicate for example that students would improve their academic achievement scores if the school year were lengthened. Extending the school year from 180 to 200 days would not only increase student achievement scores but also increase teachers' salaries, disrupt vacation schedules, and raise school taxes. Certainly no major change should take place without careful study. States should recognize, however, that some problems -- including raising achievement scores -- may only be solved by changing such long-established policies.

Seventh: Finally, the recommendations in this report do not indicate what should be done but rather options that should be considered.

The recommendations and the accompanying analyses present a range of possible solutions to the problems discussed. In some cases the recommendations, themselves, are contradictory. No recommendation is endorsed by the author or by NEREX as THE solution. They are presented in order to provoke discussion and further analysis and, if readers find them helpful, influence future educational decisions.

CHAPTER ONE:

TEACHER EDUCATION

IN A GLOBAL PERSPECTIVE

A Global Perspective

If present trends persist, the world in 20 years will be far different from what it is today. The Global 2000 Report to the President, commissioned by President Carter, describes a world with increasing problems:

- If present trends continue, the world in 2000 will be more crowded, more polluted, less stable ecologically and more vulnerable to disruption. . .
- The world's population will grow from 4 billion in 1975 to 6.35 billion in year 2000, an increase of more than 50 percent. . .
- Ninety percent of this growth will occur in the poorest countries. . .
- Real prices for food will double. . .
- Regional water shortages will become more severe. . .
- The world's forests are now disappearing at the rate of 18 to 20 million hectares a year (an area half the size of California), with most of the loss occurring in the humid tropical forests of Africa, Asia, and South America. Already an area of cropland and grassland approximately the size of Maine is becoming barren wasteland each year. . .
- The extinctions of plant and animal species will increase dramatically. Hundreds of thousands of species -- perhaps as many as 20 percent of all species on earth -- will be irretrievably lost as their habitats vanish, especially in tropical forests.[1]

The Report concludes, "the problems of preserving the carrying capacity of the earth and sustaining the possibility of a decent life for the human beings that inhabit it are enormous and close upon us." Such a conclusion

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[1]Gerald O. Barney, Study Director (Great Britain: Butler and Tanner, Ltd., 1982), pp. 1-3.

clearly has implications for America's educational systems. The authors have made a series of recommendations:

> The only solutions to the problems of population, resources, and environment are complex and long-term. These problems are inextricably linked to some of the most perplexing and persistent problems in the world--poverty, injustice, and social conflict. New and imaginative ideas--and a willingness to act on them--are essential.
>
> The needed changes go far beyond the capability and responsibility of this or any other single nation. An era of unprecedented cooperation and commitment is essential. Yet there are opportunities--and a strong rationale for the United States to provide leadership among nations. A high priority for this Nation must be a thorough assessment of its foreign and domestic policies relating to population, resources, and environment. The United States, possessing the world's largest economy, can expect its policies to have a significant effect on global trends. An equally important priority for the United States is to cooperate generously and justly with other nations--particularly in the areas of trade, investment, and assistance-- in seeking solutions to the many problems that extend beyond our national boundaries. There are many unfulfilled opportunities to cooperate with other nations in efforts to relieve poverty and hunger, stabiliz populations, and enhance economic and environmental productivity. Further cooperation among nations is also needed to strengthen international mechanisms for protecting and utilizing the "global commons"--the oceans and atmosphere.[2]

If these recommendations are to be followed, massive shifts in America's priorities must take place. These shifts can only occur if America's citizens understand clearly the issues and the potential problems, and only a well-educated citizenry can provide this direction. America's schools cannot ignore these challenges, yet in 1982 there is little evidence that schools are addressing these issues.

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[2]Ibid., p. 4.

A National Perspective

The Condition of Education, 1982 Edition reported a variety of trends in America's educational systems. School enrollments are continuing to decline:

> The number of school-aged children between 5 and 17 declined in 1981-82 to 46,126,122, and enrollment in public elementary and secondary schools dropped to 40,154,295. The 1980-81 figures were 47,171,689 school-aged children and an enrollment of 40,986,488.
>
> Average daily attendance also declined last year to 36,921,140, compared to 37,777,141 in 1980-81.
>
> The total number of classroom teachers dropped last year to 2,186,016, compared to 2,200,107 in 1980-81. There were 1,197,391 elementary classroom teachers in 1980-81 and 1,189,939 in 1981-82. There were 1,002,716 secondary classroom teachers in 1980-81 and 996,077 in 1981-82.[3]

However, elementary school age groups are expected to begin increasing again in 1985, because of the post-World War II baby boom parents, and that increase will be rapid (Charts 1 and 2). "The population of elementary school age is projected to increase as much in the 10 years between 1985 and 1995 as it declined in the previous 15 years from 1970 to 1985. Already these children are appearing in nursery school and preprimary classes."[4]

With working mothers, three- to five-year-old children have also added to enrollments at the preprimary level. Between 1966 and 1981 the proportion of such working mothers increased from 33-1/3 percent to 56 percent.

The impact of the rising school age populations will not have an impact on secondary schools until the 1990s. These projections indicate potential elementary teaching shortages while secondary school teachers are being dismissed at the same time.

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[3]"Declining School Populations," USA Today, September 28, 1982, p. 2A.

[4]Op.Cit., Barney, pp. 3-4.

CHART 1

Enrollment in Educational Institutions, by Level of Schooling: Fall 1960 to Fall 1990

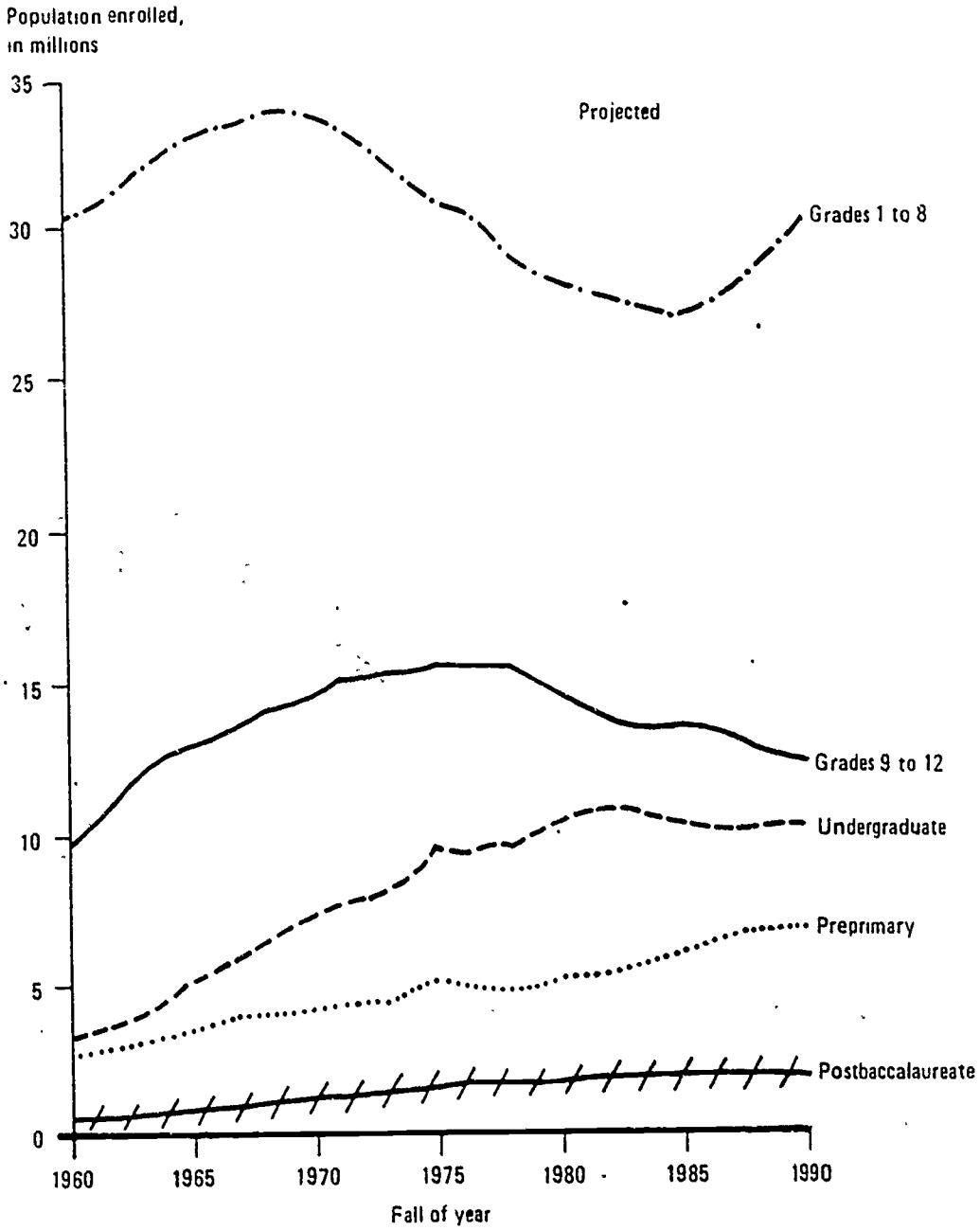
Fall of Year	Total	Pre-primary	Grades 1 to 8	Grades 9 to 12	Higher Education		
					Total	Undergraduate	Post-baccalaureate
	Number, in Thousands						
1960	46,574	[1]2,736	30,360	9,689	3,789	[1]3,276	[1]513
1961	48,091	[1]2,879	30,696	10,469	4,047	[1]3,499	[1]548
1962	49,997	[1]3,030	31,251	11,312	4,404	[1]3,808	[1]596
1963	52,082	3,168	31,965	12,183	4,766	[1]4,121	[1]645
1964	53,876	3,301	32,604	12,691	5,280	[1]4,565	[1]715
1965	55,498	3,577	32,990	13,010	5,921	[1]5,120	[1]801
1966	56,861	3,803	33,374	13,294	6,390	[1]5,525	[1]865
1967	58,181	4,026	33,593	13,650	6,912	6,016	897
1968	59,621	4,084	33,906	14,118	7,513	6,476	1,037
1969	60,478	4,136	34,015	14,322	8,005	6,886	1,111
1970	61,380	4,279	33,877	14,643	8,581	7,376	1,206
1971	61,863	4,330	33,468	15,116	8,949	7,743	1,206
1972	61,650	4,417	32,085	15,213	9,215	7,941	1,273
1973	61,531	4,399	32,153	15,377	9,602	8,261	1,341
1974	62,014	4,858	31,500	15,432	10,224	8,798	1,426
1975	62,813	5,141	30,883	15,604	11,185	9,679	1,507
1976	62,226	4,996	30,565	15,653	11,012	9,429	1,584
1977	61,665	4,806	29,990	15,583	11,286	9,715	1,570
1978	60,673	4,813	29,025	15,576	11,259	9,691	1,569
1979	60,106	4,895	28,547	15,094	11,570	9,998	1,572
1980	60,176	5,162	28,247	14,670	12,097	10,476	1,621
	Projected						
1981	59,747	5,205	27,867	14,233	12,442	10,734	1,708
1982	59,388	5,372	27,613	13,783	12,620	10,882	1,738
1983	59,022	5,584	27,383	13,542	12,513	10,754	1,759
1984	58,877	5,859	27,133	13,534	12,351	10,570	1,781
1985	58,931	6,127	27,015	13,615	12,174	10,382	1,792
1986	59,365	6,379	27,369	13,497	12,120	10,317	1,803
1987	59,883	6,585	27,988	13,217	12,093	10,293	1,800
1988	60,275	6,683	28,658	12,836	12,098	10,296	1,802
1989	60,907	6,772	29,438	12,558	12,139	10,362	1,777
1990	61,699	6,877	30,298	12,423	12,101	10,334	1,767

[1] Estimated.

Source: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1986-87, Projections of Education Statistics to 1988-1989,* and *Projections of Education Statistics to 1990-91,* forthcoming and unpublished tabulations.

CHART 2

Enrollment, by Level



The enrollment upswing projected for the preprimary level is expected to reach the elementary grades after 1985 but not the secondary grades until into the 1990's. Undergraduate enrollment is expected to drop slightly while postbaccalaureate enrollment remains unchanged.

Source: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1986-87, Projections of Education Statistics to 1988-1989,* and *Projections of Education Statistics to 1990-91,* forthcoming and unpublished tabulations.

Another interesting finding is that although there have been significant increases in the proportion of the population who completed high school in previous decades, for the past 10 years the ratio has remained stable. Approximately three-fourths of the relevant age group each year graduate, down slightly from a high in 1969 (Chart 3).

These past and future shifts in educational personnel are occurring over a period that has seen a number of firsts: Watergate, the resignation of a President, the first non-elected President, a southern conservative elected President, the hostage humiliation, and a western conservative elected President. Now the nation is tried with serious economic crises, with record numbers of unemployed, raising questions about the fundamental soundness of the economy.

These rapid and unexpected events following the disruptions of the Vietnamese War have shaken the confidence of many Americans in their long established institutions. A conservative President is redirecting the role of the federal government. Federal support for education has diminished and many federal social service programs have been reduced. States are being asked to assume greater fiscal burdens at a time of record rates of unemployment and declining tax revenues.

To the extent that schools reflect the concerns of the larger society, and they do, the country's economic conditions are leading to more teacher lay-offs, larger per pupil teaching loads, and increased school taxes that often are accompanied by angry parents demanding more productivity and accountability from school systems. No region of the country has fully escaped these economic conditions, and the problems are particularly acute in the Northeast.

CHART 3

High School Graduates, by Sex and Control of School and GED[1] Recipients: School Year 1959-60 to 1989-90

School Year Ending	Total High School Graduates (excludes GED Recipients)	As Percent of Average of 17- and 18-Year-Old Population	Sex		Control		GED Recipients
			Male	Female	Public	Private (Estimated)	
			Numbers, in Thousands				
1960	1,864	67.1	898	966	1,633	231	–
1961	1,971	68.5	958	1,013	1,732	239	–
1962	1,925	70.7	941	984	1,685	240	–
1963	1,950	70.7	959	991	1,717	233	–
1964	2,290	70.2	1,123	1,167	2,015	275	–
1965	2,665	73.0	1,314	1,351	2,366	298	–
1966	2,632	74.7	1,308	1,325	2,334	298	–
1967	2,679	76.0	1,332	1,348	2,381	298	–
1968	2,702	75.3	1,341	1,360	2,402	300	–
1969	2,829	76.3	1,402	1,427	2,259	300	–
1970	2,896	76.0	1,433	1,463	2,596	300	–
1971	2,944	75.3	1,457	1,487	2,644	300	–
1972	3,008	75.4	1,490	1,518	2,706	302	238
1973	3,043	75.1	1,503	1,540	2,737	306	248
1974	3,080	74.2	1,515	1,565	2,771	310	272
1975	3,140	74.2	1,545	1,595	2,830	310	317
1976	3,155	74.6	1,554	1,601	2,844	311	335
1977	3,161	74.9	1,550	1,611	2,846	315	333
1978	[2]3,134	[2]73.8	1,534	1,600	2,832	302	357
1979	3,124	73.8	1,526	1,598	2,824	300	403
1980	3,063	73.8	1,502	1,561	2,764	299	453
			Projected				
1981	3,021	73.7	1,480	1,541	2,721	300	490
1982	2,937	73.6	1,438	1,499	2,637	300	490
1983	2,795	73.6	1,368	1,427	2,495	300	500
1984	2,680	73.6	1,312	1,368	2,380	300	500
1985	2,614	73.6	1,280	1,334	2,314	300	510
1986	2,599	73.6	1,273	1,326	2,299	300	530
1987	2,648	73.6	1,297	1,351	2,348	300	550
1988	2,710	73.6	1,330	1,380	2,410	300	560
1989	2,626	73.6	1,289	1,337	2,326	300	560
1990	2,444	73.6	1,199	1,245	2,144	300	560

[1] Persons who received high school equivalency credentials through the General Educational Development (GED) testing programs. Their numbers have been adjusted to reflect school year.

[2] Revised.

Note: Details may not add to totals because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, *Projections of Education Statistics to 1986-87, Projections of Education Statistics to 1988-89,* and *Projections of Education Statistics to 1990-91,* forthcoming.

A Northeast Perspective

The Northeast region can be viewed as a microcosm of the entire country. The region contains approximately 16 percent of the population and runs the gamut of demographic experiences. The region contains massive urban areas (New York City and Boston), and a state (Vermont) without a single county designated as urban, while Rhode Island, the smallest state, contains the most urbanized population of any state as measured by the metropolitan population per square mile.[5]

Clearly, the Northeast is both similar to and different from the rest of the country. Places Rated Almanac provides information comparing the Northeastern states (the New England States and New York) with other parts of the country.

- Climate: The Northeast contains two of the drizzliest areas in the country; Buffalo and Syracuse, NY, with 168 days of rain annually, ranked only behind Juneau, AK, which has 212 days of rain. The Northeast contains none of the top five areas listed for "coldest," "hottest," "sunniest," "driest," or "dampest."[6]

- Housing: The Northeast contains three of the highest single family home prices listed; three of the highest Effective Real Estate Rates (a tax on the house's full value); and four of the highest House Property Tax Bills (based on the house's full value).[7]

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[5]John C. Hoy and Melvin H. Bernstein, ed., New England's Vital Resource: The Labor Source, (Washington, D.C.: American Council on Education, 1982), p. 1.

[6]Richard Boyer and David Savageau, Places Rated Almanac, (Chicago: Rand McNally & Company, 1981), p. 2.

[7]Ibid., p. 62.

- Crime: The Northeast contains the number one ranked Most Dangerous Metro Areas and none of the top 10 safest areas.[8]

- Economics: The Northeast contains only one city--Portland, Maine--that has an Aaa Bond Rating according to Moody's Bond Record, 1981. Aaa cities are considered to be in excellent financial health, and their bonds are considered to be "gilt-edge" quality, carrying the smallest risk to the investor.[9]

  In a section titled, "Economic Promise in the 1980s," the 20 Best and 20 Worst Metro areas were listed: No areas in the Northeast appeared in the "Best" list. Fourteen Northeastern areas appeared on the "Worst" list.[10]

- Education: The Northeast contains 7 of the 10 areas listed for "Best Metro Areas for K-12."

  Four Northeastern areas appeared in a listing of Lowest Student/Teacher Ratios (national metro average is 16.98 pupils per teacher); and one Northeastern region appeared in the highest ratio.

  Three of the Northeastern regions are included in the top 10 areas for teacher salaries; and two Connecticut metro areas within 100 miles of each other were rated the best and worst in the country for educational opportunities, according to the author's scoring system.[11]

Although many of the above statistics could be discussed and analyzed, two conclusions would be unchallenged.

1. The Northeast has had and continues to have outstanding educational systems.

2. The industrial economic base for supporting the Northeast is shifting and future growth opportunities appear limited.

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[8] Ibid., p. 139.

[9] Ibid., p. 328.

[10] Ibid., p. 334.

[11] Ibid., pp. 199-204.

Nonetheless, the Northeast still possesses valuable resources. In less than a generation the region has shifted from a declining industrial economy to one of high technology.[12] These industries need a highly skilled educated labor force and the region needs sound education systems to produce this labor force. The educational institutions already exist in the area. "New England has a greater concentration of colleges and universities per capita . . . than any other region of the United States."[13] Also the four top ranked states relative to the proportion of high technology employment to total employment, are New Hampshire, Massachusetts, Vermont, and Connecticut. A report on shifts in employment for the six New England states between 1947 and 1979 reveals a changing job market (Chart 4). This changing job market has direct implications for the region's educational programs.

Edward F. O'Connell analyzed this relationship in September 1981, as follows:

> Stimulated by spectacular growth in the high technology computer industry, a new mix of industries has evolved with the orientation shifting toward the service-producing sector including trade, finance, insurance, real estate, communications and transportation. While this trend has been most marked in the southern tier, it also holds true to a lesser degree in the states of Maine, New Hampshire and Vermont. Meanwhile some of the region's more historic industries, such as textiles, apparel, and leather goods, have become compressed. This new industrial mix has brought about the region's current, relatively healthy unemployment rate. Unfortunately some of the innovations

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[12] Op. Cit., Hoy and Bernstein, p. 1.

[13] Ibid., p. 14.

CHART 4

Non-agricultural Industrial Employment in New England
1947-1979

Industry	1947 (thousands)	1979 (thousands)	Change In Total Number of Jobs (thousands)	% Change
Non-agricultural Total	3,332	5,395	2,063	62%
Manufacturing Total	1,544	1,522	−22	−1
Durable Goods Mfg.	683	924	+241	+35
Lumber & Wood	48	32	−16	−33
Furniture & Fixtures	18	20	+2	+11
Stone, Clay & Glass	21	32	+11	+52
Primary Metals	73	52	−21	−29
Fabricated Metal Products	119	144	+25	+21
Machinery (except electrical)	190	203	+13	+7
Electrical Machinery	112	205	+93	+83
Transportation Equipment	58	138	+80	+138
Instruments	44	98	+54	+123
Nondurable Goods Mfg.	861	598	−263	−31
Food	86	60	−26	−30
Textile Mill Products	280	64	−216	−77
Apparel	87	65	−22	−25
Paper & Allied Products	72	70	−2	−3
Printing & Publishing	55	87	+32	+58
Chemicals & Allied Products	28	42	+14	+50
Rubber Products	59	71	+12	+20
Leather & Leather Products	114	58	−56	−49
Misc. Manufacturing	80	81	+1	+1
Nonmanufacturing Total	1,788	3,873	+2,085	+117
Construction	127	190	+63	+50
Trans. & Public Utilities	228	236	+8	+4
Trade (wholesale & retail)	599	1,160	+561	+94
Finance, Insurance, & Real Estate	129	312	+183	+142
Services & Misc.	368	1,138	+770	+209
Government	337	837	+500	+148

*For national data, misc. manufacturing is classified under durable goods manufacturing.

Sources: U.S. Dept. of Labor, Bureau of Labor Statistics, "A Generation of Change in the New England Employment Structure, 1947-1979," (Boston: New England Regional Office, 1980), p. 18.

that are sorely needed in our educational systems to keep pace with changes in the world of work have yet to occur to a satisfactory degree. No high school student today should be deprived of the opportunity to learn basic skills in computer language and programming.

Consideration of the economy of New England must never lose sight of the fact that there is a rural sector as well as the urbanized, industrial sector. While one may be more apt to equate the rural sector with the northern tier, there are also pockets of rural economy in Connecticut, Massachusetts, and Rhode Island. Agricultural activities are strong in some of these areas, while in other areas there is a need to promote economic potential in activities such as tourism and forestry products.

New England's most valuable asset may well be its extensive pool of skilled labor. Over several centuries it has proved resilient to dramatic change and has been buttressed by a tangible appreciation of the importance of education. It is an inescapable truth, however, that at present there are some inequitable dislocations within the society. The cutting edge of unemployment strikes perniciously high against members of minority groups. The numbers of school drop-outs, particularly in metropolitan areas, represent a gross waste of talent and of opportunity lost. In another direction we continue to coerce some youngsters, who have no desire to be there, to go on to college because of some misguided conception that it is the place to be. We also still suffer from an inability to equate adequately the value of a vocational/technical high school education with that of the all-purpose high school. These are concerns that should trouble not only educators but also leaders of business, industry and government.

Sudden changes in the economic forces in the region during the past decade have made it difficult for the labor force to make necessary adjustments. Thousands of older workers have found themselves the victims of technological advancements and have been unable to cope with the need to develop new skills for a different market place. This predicament underscores the need for work training programs as an extension of formal education. As fate would have it, this need is most acute at a time when the Comprehensive Education and Training Act (CETA) is being dismantled because of budgetary restrictions. There needs to be a closer relationship between the world of education and the world of work to make up for this loss.

> Are our educators thinking along these lines? In point of fact there is not much evidence that educators are doing much thinking outside the parameters of day to day operations. Perhaps a situation such as this may shake them loose. This could be an opportunity for them to seize the initiative. Dare I, as a federal official, suggest that the time has come for state and local governments to usurp a responsibility which formerly saw too much reliance placed on the federal government?[14]

Clearly, certain factors about the Northeast should be considered by anyone concerned about educational policies:

- The general level of education of the Northeast is above that nationally.
- The caliber of elementary and secondary school education in the region is comparable to and possibly superior to that in the nation.
- The region contains a disproportionate share of the nation's college degree holders in engineering and science.
- The region has a diverse mix of manufacturing industries, combining both high technology and traditional elements, and by implication a diversity of skills and experience.
- The region has shared the decline in scholastic achievement as evidenced by the SAT scores.
- The region is experiencing severe economic problems.
- Population growth will be less than that for the rest of the country.
- Both the region and the nation will experience a sharp decline in the number of young adults in the population.[15]

Some approach to bringing together the industrial technological capabilities of the Northeast with the potential of the educational system must be found.

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[14]Edward F. O'Connell, "The New England Economy and Where Education Fits Into It," The EDucator, September, 1981, pp. 2-3.

[15]Hoy and Bernstein, New England's Vital Resource: The Labor Force, p. 9.

Another important consideration is how educational decisions are made in the Northeast. A survey now being completed by the Council of Chief State School Officers reveals both the contrasts and similarities which exist in the Northeast.

- The per-pupil expenditure in 1981-82 ranged from $3,879 for New York to $1,997 for Vermont.
- The sources of FY 82 revenue for public elementary and secondary schools from local governments ranged from a high in New Hampshire, of 89.2 percent to a low of 4.1 percent in Maine.
- The New York State Education Department had a state agency administrative budget of $164,300,000. Vermont's comparable budget was $4,400,000.
- Only in New York does the state agency have direct responsibility for its four year institutions.[16]

The similarities relate to the political nature of the educational systems in comparison to other sections of the country. All of the Chief State School Officers are appointed or recommended for appointment by the State Board of Education. None are elected. Nationally, however, 19 states elect their Chief State School Officers. Similarly none of the members of the State Boards of Education are elected. They either are appointed by the governors or elected by the legislature. In thirteen other states, the state board members are elected.

Whether a state elects or appoints its educational leaders does impact how an educational system operates. In the Northeast, its state agency personnel are, at least, one step removed from the pressures of standing regularly for public election.

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[16]Statistics collected by Council of Chief State School Officers, September, 1982.

At least, two other states, Florida and California, often have education policies established through legislative action. This is less true in the Northeast and does represent a contrast between how educational decisions are made in the Northeast and other sections of the country.

Finally, the unionized labor force personified in the strong teacher organizations has a direct impact on educational policies. In many states, the legislature or the state agency can establish policies without teacher involvement. That should not and does not occur in the Northeast. As the following issues are discussed and recommendations considered, it is important to recognize that the support of teacher organizations can be a major asset in improving the region's educational systems.

CHAPTER TWO:

THE COMPETENT TEACHER

Before considering specific issues related to teacher education, it is necessary to consider a more fundamental issue -- what is a "competent teacher?" How that question is answered will shape and define any responses to teacher education problems.

Confusion exists over that question because there is no concensus among educators, states, or the general population over what is a "competent teacher." This paper proposes that a policy position on the "competent teacher" be adopted. That definition will represent a goal that cannot as yet be achieved but nonetheless, it is a goal that can be used to guide policy and program development -- a goal that educators can respond to now.

Michael Scriven has proposed a definition of professional teaching that should be seriously considered:

1. Professional teaching must contribute to substantial positive gains in learning, in some or all of content, skills, and attitude.

2. The learning gains from professional teaching should exceed those achieved by reading a book or listening to an audiotape.

3. And, professional teaching should produce gains that are greater than those produced by a non-professional in the same setting.[1]

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[1]Michael Scriven, "A Different Approach to Teacher Evaluation," Planning for the Evaluation of Teaching, ed. Willard R. Duckett (Bloomington, Indiana: Phi Delta Kappa, 1979), pp. 60-61.

If one were to substitute the word "competent" for "professional," Scriven's description could be used to isolate the major arguments concerning the characteristics of a competent teacher. There is general consensus that teachers need to be broadly educated with specific course work in general education, a content specialization, and pedagogy. In addition, teachers should possess and be able to demonstrate appropriate teaching skills.

A teacher, then, should be expected to contribute to student learning. Therefore, should not teachers be prepared and licensed on the basis of their ability to contribute to student learning? Obviously, everyone would say "yes." Then the "buts" appear.

- But-- "We do not know enough about effective teaching to require any specific set of knowledges, skills, or attitudes of present or future teachers."
- But-- "There is no consensus on what are the essentials that should be included in a preparation program."
- But-- "My nephew, who never took an education course, is the best teacher in the high school."

All of the "buts" are true to some extent. It is true that "we" do not know enough but it is also true that "we" know enough now to make major shifts in preparation and licensing procedures. Major research efforts have made it possible to begin the shift from "best opinion" (mythology, according to Homer Coker, Georgia State University) to data as the basis for preparation programs and licensing procedures. While much still needs to be learned, the problems in American education will not allow policy makers to ignore what is known while waiting for additional data.

What Is Known About Instruction and Student Achievement

The following characteristics of instruction (reported by Donald Medley at an educational seminar in Washington, D.C. in September, 1982), correlated with either high or low achievement of students have been consistently supported in a variety of research studies.

1. Teacher Use of Pupil Time.[2]

   The following four approaches to classroom management and instruction have been identified:

   Academic Time - High

   Large Group Instruction - High

   Non-academic Time - Low

   Small Group Instruction - Low

   In other words teachers who use pupil time on academic activities with large groups (8 or more students), have pupils who achieve greater academic gains than do teachers who use pupil time in non-academic activities with smaller groups of students.

2. Classroom Climate.[3]

   The following five characteristics of teacher-pupil interaction related to classroom climate have been identified:

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[2]Herman E. Behling, Jr., "What Research Says About Effective Schools and Effective Classrooms," 1981 (Unpublished manuscript), pp. 16-20, and lecture by Donald Medley.

[3]Brenda L. Bryant, "A Review of the Literature in Selected Areas of Educational Research," in Adult Learners, Theodore E. Andrews, W. Robert Houston, and Brenda L. Bryant (Charlottesville, Virginia: Association of Teacher Educators, 1981), pp. 42-43.

Praise as Motivation - High

Rebukes Student - Low

Uses Time on Management - Low

Allows Disorderly Conduct - Low

Creates a Permissive Atmosphere - Low

In other words, teachers who use praise for motivation and who do not spend time on management tasks, who do not rebuke students and who do not allow a permissive and disorderly atmosphere in their classrooms have students who achieve greater academic gains than students in classrooms which are organized differently.

3. The Quality of Instruction.

The following four aspects of teacher-pupil interaction related to instructional management have been identified:

Asks Low Order Questions - High

Asks High Order Questions - Low

Encourage Pupil Questions - Low

Amplifies Teacher Amplification - Low

In other words, teachers who ask low order questions have students who achieve greater academic gains than teachers who ask high order questions, encourage and use pupil questions, and amplify on topics or student responses.

It is important to note that these findings are primarily based upon federally funded research efforts aimed at first and third grade students in

low socio-economic areas. Nonetheless, these findings are consistent with those in other studies and should provide the basis for cognitive and skill development in preparation programs for elementary teachers.

Assuming a state or college chooses to require the study and demonstration of the characteristics above, to what extent does that support the Scriven definition of professional teaching? It is a beginning. The present status of corroborated research findings is so small, and the political problems associated with changes in college and university preparation programs and licensure standards so large, that Scriven's definition might also be considered a beginning. The analogy might be to a building for which we now have an architect's drawing but only enough materials to complete 10 percent of the structure.

It is important to note the distinction between improving preparation programs for teachers and the problems associated with assessing teacher competence. In moving toward the Scriven goal, states should be sensitive to the arguments made by Donald Medley opposing any system of preparation or licensure which attempts to use pupil learning to assess teacher competence.

> If you regard the teacher as a professional, as one whose role is comparable to that of the physician or the attorney, it does not make sense. One of the essential characteristics of the practitioner of any profession is that she/he is not expected, is not even permitted, to guarantee results. No physician guarantees that all of the patients he/she treats will recover (much less that they will never die); no lawyer promises to win every case; no dentist guarantees that you will never lose a tooth. Professional ethics demand that the professional accept any case, however hopeless; professionals offer their services, their best efforts--not results. . . . The public accepts the fact that some diseases cannot be cured because medical science, being imperfect, knows no way to

> cure them; but the public does not accept the fact that some children cannot learn some things because pedagogical science, being imperfect, knows no way to teach them![4]

Research findings also do not support state or local school district efforts to use pupil growth measures to evaluate or license teachers. While the teacher clearly has an impact on students, other factors have such an overwhelming influence that it is very difficult to isolate the influence of an individual teacher.

Robert Soar, a researcher at the University of Florida in a seminar in September, 1982 in Washington, D. C., discussed these other factors. For example, there is a correlation of .9 between a student's IQ, pretest score, and posttest score. Achievement gains are also consistently correlated with home and peer group influence. Soar completed a review of test-retest reliability studies, some with positive gains, some with negative. The overall correlation was a low of .3. "Based upon this result, it would take 20 years of repeated studies," Soar reported, "to isolate the impact of an individual teacher upon student achievement."

Medley and Soar, nevertheless, do argue that the professional should be held accountable for knowing and demonstrating "best practice," the knowledges and skills required of the professional. It is that step that needs to be taken now. Educators and state education agencies are able to define and describe better today what these essential knowledges and skills are than ever before. These foundations need to be put in place in order for the reform of teacher education to take place, to move from present practice towards the goal of "professional teaching."

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[4]Donald M. Medley, Teacher Competency Testing and the Teacher Educator, (Charlottesville, Virginia: Association of Teacher Education and Bureau of Educational Research, University of Virginia, 1982).

There are a variety of reasons why competent, professional teachers are needed. One of the most telling is the national illiteracy rate. Today one-fifth of all adult Americans cannot read at all and this number may grow to 50 million as another generation of children of these non-reading parents enter school.[5] Simply stated, this is unacceptable -- America's schools must do better. The teachers needed to teach these children to become literate, independent, functional adults must be available.

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[5]"Illiteracy Breeds Illiteracy," USA Today, September 28, 1982, p. 1D

CHAPTER THREE:

ATTRACTING QUALITY TEACHERS

For decades the United States public schools experienced teacher shortages as more and more children enrolled in public schools. Beginning in 1970 that population trend shifted and a teacher surplus developed. Many educators were secretly or openly pleased. They believed this would be a time to improve significantly the quality of the teaching force--more education majors from the top of the available pool would be hired and fewer from the bottom would obtain teaching positions. Also this could be a time to develop more rigid and appropriate certification standards, and admissions requirements to teacher education programs would be tightened. The scenario was that by 1982, the schools would have a new, talented, and academically gifted group of teachers. That has not happened.

First and foremost, the economic problems of the past few years have resulted in layoffs of newly hired teachers (supposedly the best and most talented) and a major reduction in the numbers of new teachers hired. The teaching force has aged (Chart 5).[1] The under 25-years-old group represented about 17 percent of employed teachers in 1970. By 1980, this proportion decreased to slightly more than 8 percent. The proportion of the total number of teachers in the 25-34 age range was about 28 percent in 1970; by 1976 the percentage was 40 and remained there throughout the seventies.[2]

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[1]Dearman and Plisko, The Condition of Education, p. 91.

[2]Albert Benderson, "Teacher Competence," Focus, (Princeton, New Jersey: Educational Testing Service, 1982), p. 2.

CHART 5

Age Distribution of Employed Teachers: 1970 to 1980

Year	Total Teachers, in Thousands	Age Group						
		Under 25	25 to 34	35 to 44	45 to 54	55 to 59	60 to 64	65 and Over
		Percentage Distribution						
All teachers:								
1970	2,479	16.6	28.5	21.5	17.3	7.5	6.3	2.3
1971	2,731	18.2	30.7	19.8	15.9	6.8	5.8	2.7
1972	2,841	17.3	33.5	20.5	15.7	6.1	4.6	2.4
1973	2,916	16.5	35.4	20.6	15.3	5.7	4.5	2.2
1974	2,957	14.7	38.4	20.7	15.7	5.0	3.6	2.0
1975	3,022	13.2	38.8	21.9	15.6	4.9	3.5	2.1
1976	3,099	11.8	40.0	21.5	15.8	5.5	3.3	2.1
1977	3,024	10.9	39.8	22.2	16.6	5.6	3.1	.9
1978	2,992	9.3	41.2	23.0	16.6	5.1	3.0	1.7
1979	3,118	9.0	40.0	24.2	16.5	5.2	3.3	1.8
1980	3,157	8.3	38.3	25.7	17.6	4.9	3.1	2.1
Male:								
1970	783	14.1	35.2	24.8	15.8	5.0	3.6	1.5
1971	800	16.8	39.2	21.0	14.6	4.0	3.0	1.5
1972	853	14.9	40.3	21.9	15.0	4.2	2.6	.9
1973	878	12.5	42.9	21.8	15.1	3.5	2.7	1.4
1974	908	10.1	44.6	22.8	15.6	3.3	2.1	1.4
1975	887	9.6	43.7	24.0	15.4	3.6	2.4	1.2
1976	901	9.1	45.0	22.5	14.9	5.0	2.2	1.2
1977	878	8.2	43.3	24.1	16.1	4.9	2.2	1.4
1978	868	7.7	44.2	24.3	16.1	4.5	1.7	1.5
1979	911	7.4	42.3	24.7	17.1	4.4	2.6	1.5
1980	921	7.1	39.5	25.2	19.3	4.6	2.9	1.5
Female:								
1970	1,696	17.7	25.4	19.9	18.1	8.7	7.5	2.8
1971	1,931	18.9	27.1	19.3	16.5	7.9	7.0	3.3
1972	1,981	18.3	30.5	19.8	16.0	6.8	5.5	2.9
1973	2,038	18.0	32.1	20.1	15.4	6.6	5.2	2.5
1974	2,049	16.8	35.6	19.7	15.7	5.7	4.2	2.2
1975	2,135	14.9	36.8	21.0	15.6	5.4	3.9	2.4
1976	2,198	12.8	38.1	21.1	16.2	5.7	3.7	2.5
1977	2,145	11.9	38.4	21.5	16.8	6.0	3.4	2.1
1978	2,124	10.0	39.9	22.5	16.8	5.4	3.6	1.8
1979	2,207	9.7	38.9	24.1	16.3	5.5	3.6	1.9
1980	2,236	8.8	37.8	25.8	16.9	5.1	3.2	2.3

Note: Details may not add to totals because of rounding.

Source: U.S. Department of Labor, Bureau of Labor Statistics, unpublished tabulations.

Secondly, the pool of talented young people desiring to become teachers does not appear to exist. There is a pool but it is not talented. A recent study shows that entering college students selecting teaching as a career are among the least academically talented of their classmates (See Chart 6).[3] W. Timothy Weaver, associate professor of education at Boston University, reported that from 1972-73 to 1979-80, the mean SAT verbal score for prospective education majors nationwide had fallen from 418 to 389, and the mean SAT Math score had fallen from 449 to 418. Education majors were the lowest among 12 groups of college majors listed in both categories. (Chart 6)[4]

Reasons for the decline in test scores can only be conjectured, but among the possibilities that exist are:

1. The increased opportunities for talented women and minorities to enter professional fields (e.g., engineering), that formerly have been closed to them.

2. The lack of status, promotional opportunities, and satisfactory working conditions for teachers.

3. The salary ranges for teachers as compared to other professionals. (Chart 7)[5]

> The starting salary for a teacher with a B.A. in New York City is only $11,821. . . . A Texas school district found that high school graduates in their first year averaged $4,800 more than beginning teachers. In 1980 teachers earned, on average, $17,364. Accountants averaged $24,215, chemists $35,983, and engineers $31,820.[6]

4. The increasing number of single-parent households, making a teacher's salary no longer a second paycheck but rather the total support for many professionals.

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[3]Dearman and Plisko, The Condition of Education, p. 91.

[4]Benderson, "Teacher Competence," p. 2.

[5]"What Teachers Are Paid," USA Today, p. 2A.

[6]Ibid., p. 3.

CHART 6

Scholastic Aptitude Test (SAT) Scores of College-bound Seniors, by Intended Area of Study: 1973 to 1981

Intended Area of Study	1973		1975		1977		1979		1981	
	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math	Verbal	Math
	Mean Test Score									
National total	445	481	434	472	429	470	427	467	424	466
Art and humanities	–	–	–	–	444	460	436	452	434	453
Architecture/ -environmental design	438	515	430	507	425	505	418	495	414	489
Art	440	451	435	445	412	425	404	421	403	421
English/literature	500	481	488	465	504	478	505	478	507	482
Foreign language	491	498	481	486	481	483	475	476	474	477
Music	465	487	448	464	445	463	437	456	435	454
Philosophy and religion	479	500	469	484	467	487	465	482	463	481
Theater arts	–	–	–	–	447	438	437	433	439	436
Biological sciences and related areas	–	–	–	–	438	479	435	472	433	472
Agriculture	427	471	423	459	418	457	408	443	404	440
Biological sciences	493	533	481	525	475	515	472	507	471	504
Forestry/conservation	–	–	–	–	426	467	420	456	418	452
Health and medical	–	–	–	–	433	474	430	469	428	469
Nursing and health	419	444	410	444	–	–	–	–	–	–
Business, commerce, and communication	–	–	–	–	412	454	408	448	406	446
Business and commerce	409	463	406	461	402	453	400	447	398	446
Communications	476	483	458	461	459	460	448	449	443	446
Physical sciences and related areas	–	–	–	–	454	549	448	535	443	527
Computer science/systems analysis	–	–	–	–	422	505	419	498	416	492
Engineering	460	548	450	541	448	546	445	536	446	534
Mathematics	481	595	463	580	464	588	459	580	456	572
Physical sciences	505	570	501	565	500	572	498	561	498	558
Social sciences and related areas	–	–	–	–	432	453	429	449	429	449
Education	418	449	405	434	400	426	392	420	391	418
Ethnic studies	–	–	–	–	381	396	372	386	381	395
Geography	–	–	–	–	421	473	438	481	422	474
History and cultures	–	–	–	–	478	474	478	471	482	472
Home economics	413	441	409	442	399	428	389	417	383	411
Library science	–	–	–	–	478	453	476	448	464	431
Military science	–	–	–	–	435	489	434	481	433	474
Psychology	–	–	–	–	444	455	435	447	433	447
Social sciences	476	490	465	476	456	474	455	472	456	474
Miscellaneous	–	–	–	–	431	473	420	458	420	459
Other	–	–	–	–	422	458	396	430	395	431
Trade and vocational	400	450	370	405	357	400	353	394	350	391
Undecided	–	–	–	–	448	491	441	480	440	480
Other/undecided	446	489	438	477	–	–	–	–	–	–

– Not available.

Note: 1973 and 1975 data are based on a 10 percent random sample.

Source: College Entrance Examination Board, *A Summary of SAT Score Statistics for College Board Candidates, 1976, National Report, College-Bound Seniors, 1979, 1981,* and unpublished tabulations of the College Board, copyright.

CHART 7

WHAT TEACHERS ARE PAID

Here are estimated average public school teacher salaries for 1981-82:

Alaska	$31,924	Ohio	$18,116
D.C.	24,265	Arizona	18,014
Hawaii	23,261	Iowa	17,989
New York	22,826	North Dakota	17,686
California	22,755	Montana	17,625
Michigan	22,351	Texas	17,485
Washington	22,322	Kentucky	17,200
Wyoming	22,153	West Virginia	17,127
Rhode Island	21,494	Virginia	17,090
Maryland	21,110	Oklahoma	17,020
Illinois	21,002	North Carolina	16,947
Oregon	20,305	Florida	16,907
Nevada	20,105	Kansas	16,712
Minnesota	19,903	Nebraska	16,570
Massachusetts	19,875	Missouri	16,499
New Jersey	19,706	Idaho	16,388
Colorado	19,577	Georgia	16,363
Wisconsin	19,387	Tennessee	16,175
Pennsylvania	19,307	Alabama	15,494
Delaware	19,290	South Carolina	15,490
Indiana	18,966	Maine	15,105
New Mexico	18,905	South Dakota	14,717
Louisiana	18,500	Vermont	14,715
Connecticut	18,317	New Hampshire	14,701
Utah	18,169	Arkansas	14,223
		Mississippi	14,141

Source: NEA Research

The reasons may vary but the conclusion is clear; talented young people are not choosing teaching as a career.

For the above reasons, efforts are now underway to attract talented young people, and already established professionals, to teaching careers. Major issues are related to the need to attract teachers.

The first issue is clear and to some people it is the major issue in teacher education: How can more talented people be attracted to teaching careers?

Recommendations related to this issue focus primarily on broadening the base of potential candidates for teaching careers. The focus of these recommendations is on the role of the state education agency. Although a state education agency might agree that maintaining a competent cadre of certified teachers is important, many SEAs would argue that this is not their direct concern. However, when the problems of teacher shortages and inadequately prepared professionals surface, legislators will make very clear that there is a state responsibility for ensuring an adequate supply of competent teachers.

Recommendation: Establish a major public relations campaign to emphasize the positive aspects of choosing a teaching career.

The above recommendation would be supported by most educators.

While establishing a public relations campaign is possible, it raises several issues. To be effective, the campaign must be very carefully constructed. Such a campaign is likely to be effective only if professional public relations personnel are involved. If it is created by professionals,

it will be very expensive. The major question that a state must answer, then, is "How much money does the state wish to spend on a public relations program?"

A more fundamental issue concerns why a public relations campaign is necessary. If the criticisms of public schools were eliminated, would a public relations campaign be necessary? If the answer to that question is "No," would not comparable amounts of money then be better spent on eliminating problems that have made teaching careers seem less than desirable?

Recommendation: Make major changes in certification and licensing requirements in order to broaden the pool of prospective teachers.

This suggestion is clearly within the state's prerogative, but it raises questions about what the state's role is. Is it to supply "an adequate number" or "competent teachers" or is it both? Any movement by a state to lower licensing standards to provide a greater number of candidates may cause other problems. More teachers certified through lower standards may provide poorer learning opportunities for children and create even greater problems for the public schools.

Recommendation: Raise teachers' salaries significantly to make teaching careers more competitive with careers in private industries.

Recommendation: Alter the working conditions of teachers; for example,

a) Promote the use of parttime faculty;

b) Provide opportunities for teachers to collaborate in professional decisions about their schools and careers; and/or

c) Alter the established patterns of instruction: use team teaching, computer-assisted instruction, out-of-school experiences, varied class schedules, etc.

These recommendations have been grouped together because they deal with conditions teachers face in their local communities. It is true that states could raise teacher salaries across the state by passing laws. However, the cost of such legislation is prohibitive during the present economic crisis. These recommendations need to be instituted at and by the local school district. Even though state laws, rules, and regulations may need changing, a decision that change is needed, must come from local school district initiatives. The American educational system rests on the delicate balance between state and local decision-making prerogatives. States recognize this and are generally sensitive to the roles and responsibilities of local school districts.

Recommendation: Set higher standards to eliminate potential teachers with weak academic backgrounds.

This recommendation suggests raising standards not increasing the number of potential candidates. States whose concern is quality not numbers will move in this direction. The reality is that as more and more marginally competent academic students choose teaching careers, the public may demand higher preparatory standards, irrespective of the impact on the supply of potential teachers.

Shortage of Mathematics and Science Teachers

The shortages of mathematics and science teachers have quickly become a national concern. Not only have colleges all but stopped educating math and

science teachers, but also the public schools have seen math and science teachers leave in record numbers. Reports indicate a 77 percent decline in the numbers of math and 65 percent decline in the numbers of science teachers in the past 10 years. There are not enough graduates produced each year to fill the vacant positions, and furthermore, many of these graduates, if not most, go into business and industry without ever seeking teaching positions. Emergency certificates are issued to unqualified teachers; in 1981-82 nationally, 50 percent of the teachers teaching math and science were unqualified according to a study by Hurd.[7]

The issue is clear: How can an adequate group of competent math and science teachers be attracted to a teaching career in the public schools?

The following recommendations might be considered.

Recommendation: Raise significantly the salaries of math and science teachers.

Many educators oppose this possibility because it will create a differentiated salary scale for teachers. Such thinking would eliminate the possibility of salary increases for math-science specialists; however, educators must be open to new approaches (the approach is really not new, because until the recent rise of professional associations, school districts often paid teachers on their value--a scarcity factor--to the local district). In Houston in 1981-82, a bonus of $2,000 is being offered to teachers in areas where shortages exist, contingent on the teacher being absent no more than 5

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[7]"The State of Precollege in Education in Mathematics and Science," keynote address National Convocation on Precollege Education in Mathematics and Science, Washington, D.C., May 12-13, 1982.

days and returning to the same school the following year. There, bonuses have proven attractive to prospective teachers and have helped stabilize staff.[8]

Recommendation: Give tax credits to teachers who teach in predetermined areas of shortage, such as math and science.

This recommendation could be instituted by either the state or federal government. If this recommendation is followed, the tax credits would need to be large enough to encourage people to shift their initial career goals to teaching. An analysis of the overall fiscal impact on the state or federal budget would need to be computed. However, the direct cost of such a program would probably be less than more direct payments to teachers, such as bonuses.

Recommendation: Provide scholarships and loans to teachers choosing to major in math and/or science and who agree to teach a predetermined number (3-5) of years in the public schools.

This option should be seriously considered. It will cost little in terms of the overall state budget and might attract a sizable number of math and science majors to teaching careers.

Recommendation: Acquire parttime faculty from business and industry to teach math and science courses.

This recommendation is already being followed in a number of communities. This effort takes a commitment from the local school district and from the state, because it may be necessary to alter existing laws, rules, or regulations to hire professionals outside the education field. States, if they

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[8]Ibid., p. 7.

wished, could provide materials to local school districts describing how such parttime teaching faculty could be recruited, paid, and used.

Major objections to many of these recommendations may come from individuals and organizations committed to established policies: a single salary scale for all teachers; opposition to use of parttime (and probably uncertified) teachers.

The need to provide qualified math and science teachers is acute and immediate. Prolonged discussions of possible options will only delay finding workable solutions. Many states have already taken steps to address this situation. In the Northeast, where there is a clustering of high technology industries, the problem is even more severe. When the high technology industries and workers are seen as part of the solution, a resource to use, the Northeast will recognize its advantage over many parts of the country.

Recommendation: Encourage states to establish regional centers where math and science teachers could serve a number of school districts.

There are several advantages to this solution. In most states, some form of a regional network already exists as do models for providing teaching services to local school districts. Also, the math and science teachers could be paid through the state, not the local district, at a salary that would be closely competitive with private industry. Such teachers might be given extra teaching loads and serve several school districts on alternating days.

Such a system would need some adjustment by the local school district. The scheduling of math and science courses, recruiting the teachers, and setting the amount of time needed to make the system operational all would take intensive involvement, but the system could be operational within a year.

o To implement this system, legislation might be sponsored.

A Technology Corps of qualified math, science, and computer teachers could be recruited, trained, and placed in schools where shortages exist. Similar to Peace Corps and Teacher Corps, this could be a state or federal initiative.

Federal legislation as reported in the Washington Post is already being considered.

> Two members of Congress introduced legislation on September 29 to encourage teachers to major in math and science.
>
> Japan graduated 74,000 math and science majors last year, far more than the 52,000 U.S. graduates although Japan's population is about half as large, noted Sen. John Glenn (D-Ohio). The Soviet Union graduated about 300,000, he said, adding that 15 percent of U.S. science and math teaching jobs are vacant.
>
> A quarter-century after the Soviet Union orbited the first Sputnik satellite in 1957, he said, "we're at the lower end of a curve at the very time other countries are beginning to out perform us."
>
> With Rep. Dave McCurdy (D-Oklahoma), Glenn introduced legislation to provide industries with tax credits for allowing their science experts to teach part-time or in summer schools. Another bill would provide prospective math and science teachers with student loans repayable by years spent teaching. One year's teaching would eliminate one year of the loan payments, McCurdy said.[9]

Impending shortage of teachers within 3 to 5 years

So much attention has been given to problems of teacher layoffs and outplacements that a major developing problem has not been addressed. As previously noted, increasing numbers of elementary students will be entering the public school systems in 1985 immediately creating a need for more elementary teachers.

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[9]"Math, Science Teachers Sought," Washington Post, September 30, 1982, p. A27.

CHART 8

Employed Teachers and Teacher Layoffs and Shortages in Public and Private Elementary/Secondary Schools, by Field of Assignment: Spring 1979

Field of Assignment	Employed Teachers[1]		Layoffs[2]		Shortages[3]	
	Number[4]	Percent of All Teachers	Number	Percent of All Layoffs	Number	Percent of All Shortages
Total	2,552,000	100.0	23,900	100.0	11,300	100.0
Preprimary	99,000	3.9	1,300	5.5	700	6.3
Primary and general elementary	899,000	35.2	7,800	32.8	2,600	23.3
Art	57,000	2.2	1,100	4.5	100	.8
Basic skills and remedial education	9,000	.3	100	.5	(5)	(5)
Bilingual education	22,000	.9	200	1.0	400	3.7
Biology	30,000	1.2	300	1.1	100	.9
Business	45,000	1.8	400	1.7	200	1.8
English language arts	188,000	7.4	1,800	7.6	200	2.2
Foreign languages	53,000	2.1	800	3.3	100	1.1
General science	76,000	3.0	700	3.0	200	2.1
Health, physical education	158,000	6.2	1,100	4.7	100	1.2
Home economics	36,000	1.4	500	2.3	(5)	(5)
Industrial arts	41,000	1.6	400	1.8	600	5.3
Mathematics	150,000	5.9	1,100	4.4	900	8.3
Music	87,000	3.4	900	3.7	200	1.4
Reading	73,000	2.9	400	1.5	300	2.8
Physical sciences	25,000	1.0	100	.5	600	5.5
Social studies/social sciences	143,000	5.6	1,300	5.5	100	.8
Special education	219,000	8.6	2,700	11.5	3,200	28.3
Vocational education	101,000	4.0	600	2.5	300	2.9
Other	39,000	1.5	100	.4	100	1.1

[1] Includes all full-time and part-time classroom teachers in public and private elementary/secondary schools during the 1979-80 school year.

[2] A layoff represents a teacher whose contract was not renewed at the end of the 1978-79 school year because of budget limitations, and whose position was not subsequently filled.

[3] A shortage represents a teaching position opening (budgeted new position or position vacancy) occurring from spring 1979 to fall 1979 (for the 1979-80 school year) for which teachers were sought but were unable to be hired because no qualified candidate was available.

[4] These figures represent unduplicated counts of teachers among fields. Teachers in more than one field were reported only in the field in which they spent most of their teaching time. The exception was that any teacher engaged in bilingual or special education was counted in either of those areas regardless of the time spent in other areas.

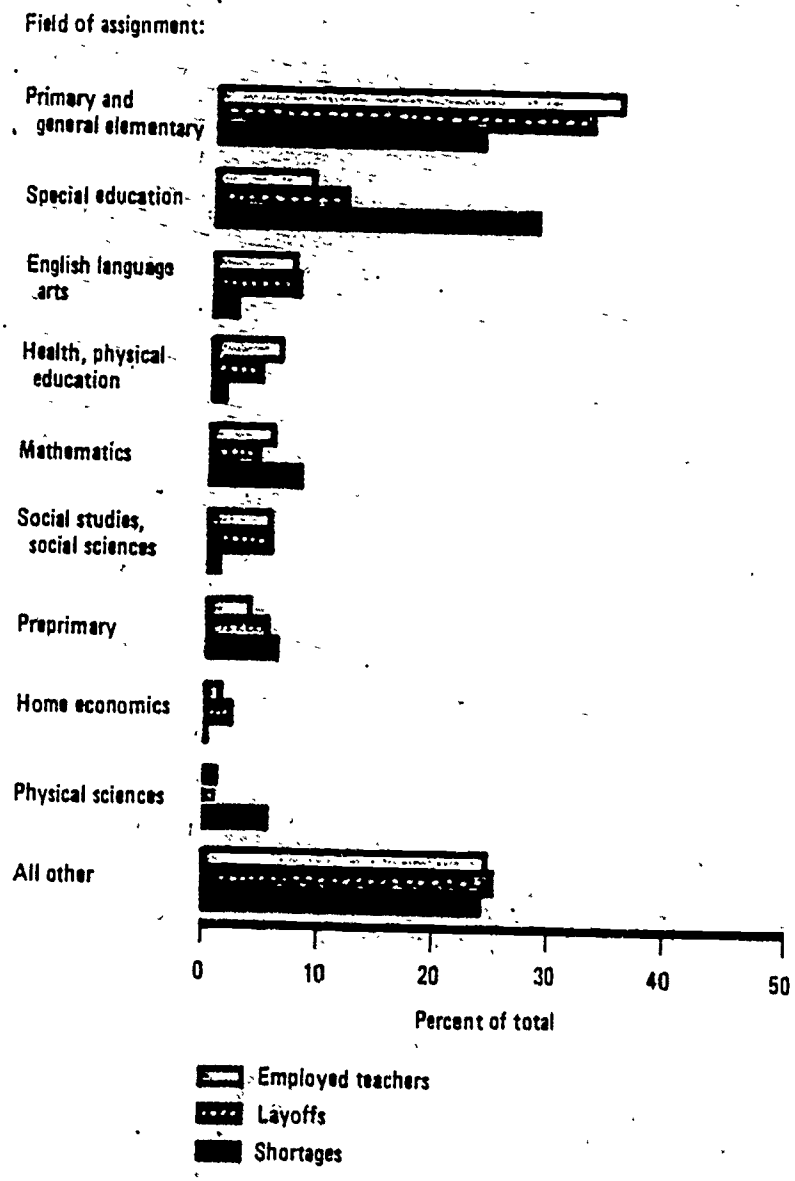
[5] Less than 100 positions.

Note: Details may not add to totals because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, Survey of Teacher Demand and Shortages, "Teacher Layoffs, Shortages in 1979 Small Compared with Total Employed", NCES 81-121a, 1981.

CHART 9

Employed Teachers and Teacher Layoffs and Shortages by Field as Percent of Total Employed Teachers and Teacher Layoffs and Shortages



While 23 percent of teacher shortages were in elementary education, an even larger proportion of layoffs were in that field in 1979. Fields in which the number of shortages exceeded the number of layoffs were bilingual education, industrial arts, physical sciences, and special education.

In addition, shortages already exist in almost every teaching field (Charts 8 and 9).[10] The problem is that there is both a surplus and a shortage in many fields because of geographic factors. For example, Massachusetts school layoffs caused the dismissal of 344 math teachers as a result of Proposition 2-1/2, yet there is still a shortage of math teachers in the state. This statistic illustrates the problem of finding career opportunities for teachers who are dismissed. Professional positions exist across the country but the candidate must be willing to move. An educator in Georgia reported a shortage of 4,000 teachers during the summer of 1982. States should have this information available. Outplacement activities associated with business and industry have had limited impact because of the general economic decline across the country.

Another reason for predicting a major teacher shortage is based on the aging teacher force and pending retirements within the next 10 years. Finally, the number of candidates preparing to become teachers has declined radically in the past 10 years. Add to these problems the fact that many people who prepare to become teachers never teach. The figures for 1976-77 (Charts 10 and 11)[11] indicate 23 percent of the candidates never applied for a teaching position and only 49 percent actually found work.

In addition, there will be a significant decline in high school graduates from 1979 to 1995 (Chart 12). The states of New York, Massachusetts, Connecticut, and Rhode Island will experience declines of over 40 percent. Colleges and universities will have far fewer students and the potential pool of college students who might become teachers will also shrink.[12]

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[10]Dearman and Plisko, The Condition of Education, p. 10.

[11]Ibid., p. 99.

[12]Sandra Keyes, "Halls of Ivy Will be Emptier in the 1990s," USA Today, September 29, 1982, p. 5B.

CHART 10

Elementary/Secondary School Teaching Status of 1976-77 Bachelor's Degree Recipients Newly Qualified to Teach, by Field of Teacher Preparation: February 1978

Field	Total Newly Qualified to Teach	Did Not Apply for Teaching Job	Applied for Teaching Job				
			Total Applied	Total Teaching[1]	Teaching: Full-Time	Teaching: Part-Time	Not Teaching
			Number				
All fields	177,200	40,000	137,200	106,200	86,800	19,400	31,000
General elementary	47,700	6,400	41,300	33,800	27,800	6,000	7,500
Special education	24,100	3,500	20,600	17,400	15,400	2,100	3,100
Social science	12,700	3,200	9,500	7,000	5,700	1,200	2,500
Physical education	10,400	1,700	8,700	6,500	5,400	1,100	2,200
English	8,300	1,100	7,200	5,100	4,800	200	2,100
Music	7,500	1,700	5,800	4,300	2,900	1,400	1,500
Art	5,600	1,900	3,800	2,300	1,100	1,300	1,500
Mathematics	5,000	1,100	3,900	2,900	2,800	100	1,000
Vocational education	4,500	900	3,600	2,800	2,400	400	800
Business	3,800	2,000	1,900	1,500	1,300	200	400
Industrial arts	3,600	800	2,800	2,100	1,900	200	700
Other[2]	20,000	6,600	13,400	10,500	8,200	2,300	2,900
More than one field	23,000	9,300	13,800	9,100	6,900	2,200	4,700
No certification	1,000	(3)	1,000	1,000	400	600	(3)
			Percent				
All fields	100	23	77	60	49	11	17
General elementary	100	13	86	71	58	13	16
Special education	100	14	85	72	64	9	13
Social science	100	25	75	55	45	10	20
Physical education	100	16	84	63	52	11	21
English	100	13	87	61	58	3	26
Music	100	23	77	57	38	19	20
Art	100	23	67	41	19	22	26
Mathematics	100	22	79	58	55	3	21
Vocational education	100	19	81	62	53	9	19
Business	100	52	49	39	34	4	10
Industrial arts	100	22	78	57	51	6	20
Other[2]	100	33	67	53	41	11	15
More than one field	100	40	60	39	30	9	20
No certification	100	(3)	100	100	40	60	(3)

[1] Includes teaching as a second job.

[2] Data for the following fields are included in the "other" category because their sample sizes are too small to present them individually: biological science, foreign language, health, economics, reading, physical science, bilingual education, and English as a second language.

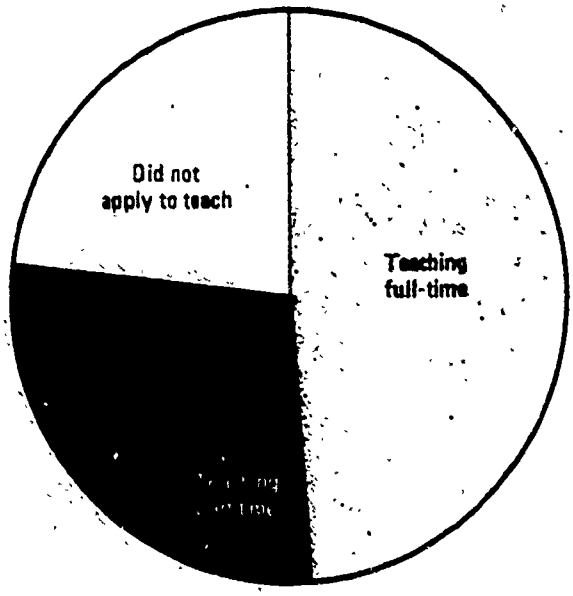
[3] Zero in sample.

Note: Details may not add to totals because of rounding.

Source: U.S. Department of Education, National Center for Education Statistics, *New Teachers in the Job Market*, 1981.

CHART 11

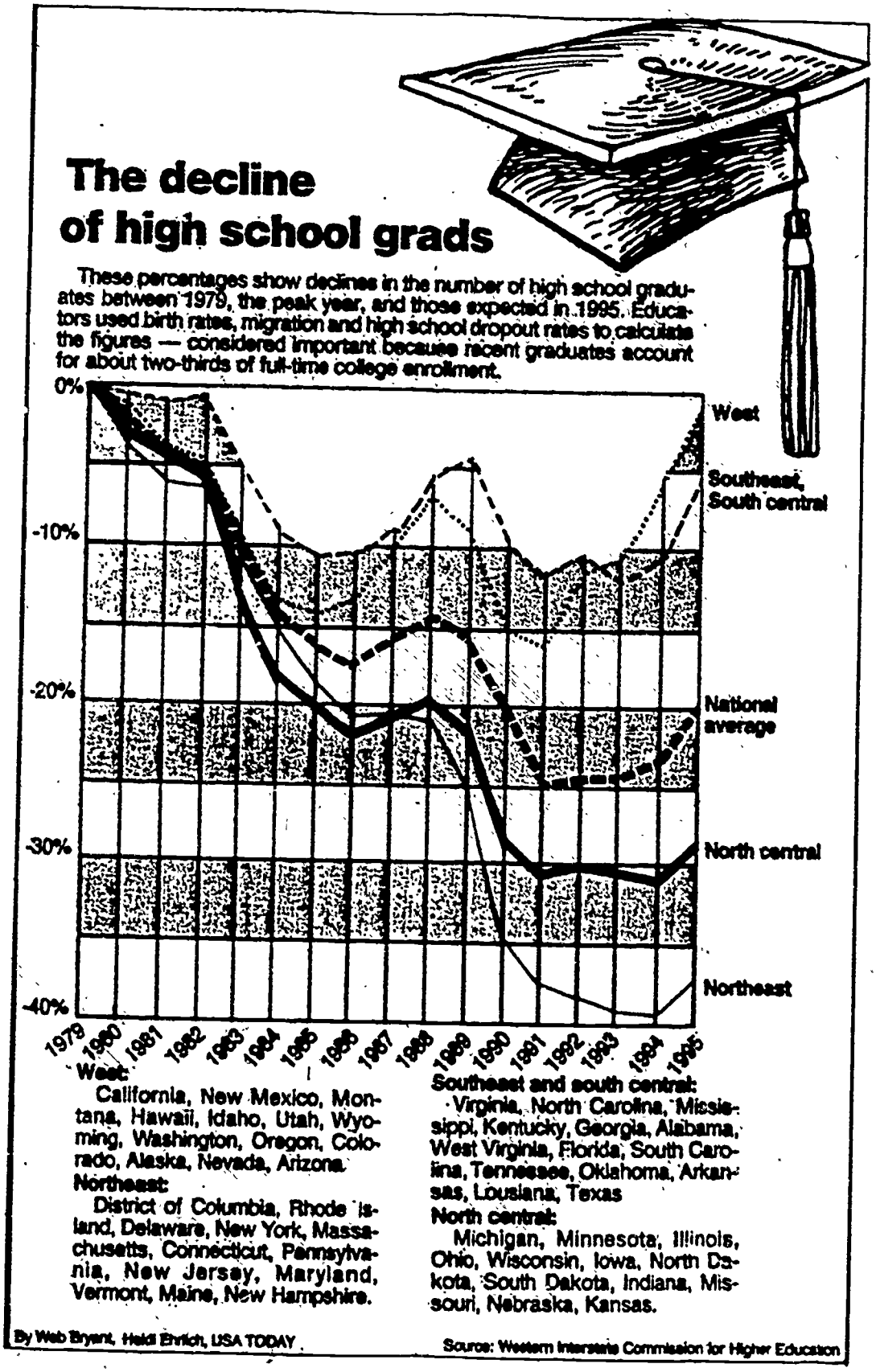
Teaching Status of 1976-77 Newly Qualified Teachers in 1978



Of the 177,200 bachelor's degree recipients of 1976-77 who were newly qualified to teach, 77 percent applied for teaching jobs and 60 percent were teaching by February 1978. Less than half of those qualified to teach with degrees in the fields of art and business were teaching one year following graduation.

Source: U.S. Department of Education, National Center for Education Statistics, *New Teachers in the Job Market*, 1981.

CHART 12


The decline of high school grads
These percentages show declines in the number of high school graduates between 1979, the peak year, and those expected in 1995. Educators used birth rates, migration and high school dropout rates to calculate the figures — considered important because recent graduates account for about two-thirds of full-time college enrollment.
0%
-10%
-20%
-30%
-40%
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
West
Southeast, South central
National average
North central
Northeast
West:
California, New Mexico, Montana, Hawaii, Idaho, Utah, Wyoming, Washington, Oregon, Colorado, Alaska, Nevada, Arizona.
Northeast:
District of Columbia, Rhode Island, Delaware, New York, Massachusetts, Connecticut, Pennsylvania, New Jersey, Maryland, Vermont, Maine, New Hampshire.
Southeast and south central:
Virginia, North Carolina, Mississippi, Kentucky, Georgia, Alabama, West Virginia, Florida, South Carolina, Tennessee, Oklahoma, Arkansas, Lousiana, Texas
North central:
Michigan, Minnesota, Illinois, Ohio, Wisconsin, Iowa, North Dakota, South Dakota, Indiana, Missouri, Nebraska, Kansas.
By Web Bryant, Heidi Ehrlich, USA TODAY
Source: Western Interstate Commission for Higher Education

Teacher Supply and Demand

All of these factors taken together point directly to an impending teacher shortage of possibly significant numbers. States need to consider now what steps they should take.

Recommendation: Develop on a state and regional basis timely supply and demand statistics.

Accurate and timely data are needed related to teacher supply and demand for individual states and for the region. While there are problems associated with collecting such data, it can be done. New York State, through its Basic Education Data Systems (BEDS), collects data annually on all educational personnel, including placement information on all first-year teachers by certification area. By comparing the numbers of new teachers to the number of persons certified, New York can accurately report the percentage of placements in its schools. Also New York State uses a survey instrument to collect demand information from local school districts. It cannot report detailed information on those certified who are not teaching in New York State.

The following pages briefly describe how a supply and demand system might be built. This could be managed by NEREX as a regional project. It would be important to recognize that additional states might need to be included, such as Pennsylvania and New Jersey, because of their proximity to the NEREX states.

Several important assumptions underlie the model that is described here.

1. The model should contain two related elements: a current status report and a projection design.

2. If at all possible, states should rely on data that states (not institutions of higher education or local school districts) have the responsibility for collecting.

3. The current status data should be based primarily on a reporting of actual persons.

4. The current status report should be an accurate accounting of supply and demand data for 1 year. The projection design should not attempt to provide estimates for more than 5 years.[13]

These four assumptions would allow models to be developed which would be simple enough in construction to permit a maximum number of states to participate.

I. What Data Should States Collect in Order to Obtain Teacher Supply and Demand Information to be Useful in Developing a State Model?

A. Basic Components for Current Status Data

To determine the supply of available teachers, the following basic data are needed:

1. Number of persons who receive a single certificate and the specific certification area (e.g., elementary, secondary English) for which it is valid.

2. Number of persons who receive more than one certificate and the specific certification area for which each certificate is valid.

3. Number of persons receiving certificates who reside within the state.

4. Number of persons receiving certificates from out-of-state.

5. Number of persons previously certified who do not have teaching positions but may be actively seeking them (the reserve pool).

6. Number of persons from 3, 4, and 5 who actually are seeking employment.

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[13]Theodore E. Andrews, "Feasibility Study of State Education Agency Supply and Demand Model," Study sponsored by the National Center for Educational Statistics, September, 1976, pp. 1-19.

B. Basic Components for Demand Data.

To determine the demand for teachers, the following data are essential:

1. The number of newly hired teachers by curriculum area and level.

   a. Number of first-year teachers from in-state and from out-of-state.

   b. Number of returning teachers from in-state and from out-of-state.

C. Basic Components of the Projection Design

The projection design should include the following elements:

1. Number of persons in preparation programs for the next 2 years.

2. Public school enrollment estimates for the next 5 years.

II. How Data Should be Collected.

Clearly a computerized data collection system capable of collecting and retrieving individual data (annually) on each teacher would be essential if a model is to be totally realized. However, many parts of the system (particularly the supply elements) can be made operational without costly computer systems. Using questionnaires in which data are obtained from colleges and universities would not be expensive. Although there are some drawbacks to the use of questionnaires (difficulty of getting a 100-percent return, lack of precise data, inability to trace individuals), states without computerized systems could even now begin to develop and use a supply and demand model.

CHAPTER FOUR:

PREPARING QUALIFIED TEACHERS

> Let's face it: Colleges of pedagogy will in all probability never overhaul their programs if each college is to do it alone. There are too many hurdles, too much disparity among institutions, too much institutional jealousy, too much divisiveness and lethargy among faculties, too much fear, and too much ineptness in the leadership.[1]
>
> B. Othanel Smith

Two overwhelming issues relate to the preparation of teachers. The first is the nature of colleges and universities themselves; the second is determining the appropriate role for the state education agencies.

Colleges and universities can prepare competent teachers (the resources, human and fiscal, exist); the problem is why do they so often fail to do this. A variety of factors contribute to this reality.

First, the professional education faculty controls only its curricula offerings and even that control is limited. The faculty as a whole negotiates constantly for new courses, stronger requirements, better students. Since a university curriculum is finite (120 semester hours is a common requirement for a B.A. degree), everything that is added is taken away from something that exists. In a recent court case, the U.S. Supreme Court ruled that faculty members at Yeshiva University were managers and, as such, ineligible for protection under the National Labor Relations Act.[2] Justice Powell in the following excerpt from the majority opinion described the role of a university faculty:

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[1]B. Othanel Smith, "Pedagogical Education: How About Reform?" Phi Delta Kappan, October, 1980, p. 79.

[2]David Kuechle, "Yeshiva Shock Waves," Harvard Educational Review, Volume 52, No. 3, August 1982, p. 275.

> The controlling consideration in this case is that the faculty of Yeshiva University exercise authority which in any other context would be managerial. Their authority in academic matters is absolute. They decide what courses will be offered, when they will be scheduled and to whom they will be taught. They debate and determine teaching methods, grading standards and matriculation standards. They effectively decide which students will be admitted, retained, and graduated. On occasion their views have determined the size of the student body, the tuition to be charged, and the location of the school. When one considers the function of a university, it is difficult to imagine decisions more managerial than these. To the extent that the industrial analogy applies, the faculty determines within each school the product to be produced, the terms upon which it will be offered, and the customers who will be served.

This reality makes it very difficult for even gifted educational faculty to develop and implement programs of quality when every faculty member helps decide what the teacher education curriculum should be.

Another factor, often overlooked, is that the teacher education curriculum which is so often criticized represents only one-eighth to one-half the total college curriculum. If teachers are poorly prepared, lack basic skills, are not academically talented, etc., then the liberal arts faculty bears at least some of the responsibility for these outcomes.

Quality control, an essential in any successful endeavor, is difficult to maintain. The essence of quality control is that someone is accountable for something. This assumption is anathema to many college teachers who consider all such issues as an infringement of academic freedom. Three contending interests exist within most colleges and universities: the liberal arts tradition, the utilitarian orientation toward practical careers, and the drive toward advanced scientific and scholarly research.[3]

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[3]Thomas P. Melady, "Defining a Worthwhile Liberal Education," The Sunday Post, Bridgeport, Connecticut, August 1, 1982.

Although the utilitarian group will often accept responsibility for "quality" programs, it would resist the "control" part. As long as an institution is unwilling to examine critically and publicly its students, public pressure will grow for the state or the profession to do this.

The problem of maintaining quality control is in part a result of a lack of data. Measures of effectiveness do not exist, little research is done, follow-up studies are often simply surveys requesting opinion data. Again colleges and universities could collect data, but it would take more resources at a time when resources are declining.

Collegiate programs are supported by staff assigned to departments on the basis of full time equivalenc (FTE) students. Declining enrollments have reduced the FTEs, causing reductions in faculty and support services. At a time when the public is demanding more quality from its educational systems, the resources needed to meet these expectations have been severely limited. Colleges and universities preparing teachers have the fewest resources to meet these challenges.

Recommendation: Encourage colleges and universities to develop extended programs of preparation (revising state rules and regulations, if necessary).

Extending Academic Preparation

In the past few years, there has been renewed interest in extending teacher preparation to 5 and even 6 or 7 years. Colleges and universities across the country have organized committees to study the feasibility of extended programs and to design new programs. Eminent scholars in the field

have written articles and treatises on the importance of extended preparation to the professionalization of teaching, and ultimately, to the improvement of schools. Citing an expanded knowledge base about teaching and learning, proponents have built a case for extending programs to allow for more professional preparation, more field experience, and opportunities for transition from preparation to practice.

The reasons given for extending programs are that:

1. The expanded professional knowledge base cannot be accommodated by rearranging the form and content of existing programs.

2. Reducing the general education requirements in order to increase professional studies in current programs is unacceptable; teachers should be broadly educated individuals and should be rigorously prepared in the subject matter(s) they teach.

3. There has been no substantial increase in preparation time required for teachers during the past half century.

4. Increases in social esteem and salary have followed, not preceded, increased training.

Many states require a "fifth year" of study for continuing teacher certification but no state requires a "fifth year" for initial certification. There are only a handful of 5-year preservice programs in existence, one at the University of New Hampshire. This program provides: (1) early and multiple field based experiences, which allow students to make informed decisions about career paths; (2) rigorous selection and retention criteria; and (3) a year-long internship during the fifth year, usually culminating in a master's degree. UNH also has a non-master's option in which students may elect the internship without fulfilling the degree requirements. Other features include an integrated program of general studies, professional and field practices--not a traditional 4 years with one extra year--and a high degree of faculty-student contact and collaboration between the college and the schools.

Several institutions in the Northeast (such as Bank Street in New York City) offer graduate level teacher education programs for persons with bachelor's degrees in academic fields. These programs operate as professional schools, and thus avoid many of the problems associated with undergraduate preparation programs. They attract a different type of student: older, with proven academic ability and knowledge, more life experiences, and a high level of motivation. At least one program, the Upper Valley Teacher Training Program in Hanover, New Hampshire is not university based. This independent program offers an intensive year-long internship with master teachers in local schools. Analysis of teaching, observation, and continuing evaluation are stressed in an emphasis on blending theory and practice. Interns who successfully complete the program are recommended for certification.

While many think that a 5- or 6-year preservice program is ideal, there are many questions and obstacles, both practical and ideological, that must be examined before states endorse or require an extended preservice program as the model for teacher preparation.

1. Cost to students, institutions, and taxpayers

    a. Will any students, particularly promising ones, be willing to spend another year in training to enter a low-paying field?

    b. Will low-income and minority students be effectively denied entry to the field because of the costs of time, tuition, and loss of earnings?

    These issues could be offset by entry at a master's salary level, adding costs to school budgets . . . but presumably increasing quality of performance.

    c. Where will the resources come from to fund a larger teacher education faculty for a longer program and a necessarily more expensive graduate and field-based training format?

2. Implementation and management of an extended program demands a

> 'critical mass' of qualified cooperating teachers, classrooms and pupils . . . (this) will force extended programs to align themselves where a critical mass is most likely to exist--large school districts . . . or those closest to campuses. . . .[4]

3. Faculty and administrators of these programs state that they produce superior teachers. The students are no doubt more completely prepared than their counterparts from 4-year programs, but the question may be posed, "Are they better because of the program or because they are a self-selected group entering the program: bright, motivated, and committed to teaching?" One might ask the same question about Master of Arts in Teaching (MAT) programs. Evaluations of teachers trained in MAT programs and in traditional programs have not been completed.

Issues related to the roles of preservice students, interns, new teachers, supervisors, cooperating teachers, and administrators have larger implications for the organization and functioning of schools. University faculty roles, particularly arts and sciences faculty, would also be changed as would the delivery of courses and programs away from campuses.

Costs for new roles, evaluation systems, supervisory and support systems, and for additional preparation must also be considered. In this form of extended preparation, costs to students/teachers are potentially held to a minimum, while the expanded system of preparation would shift those costs to the schools and the teacher education programs, and consequently to the taxpayer.

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[4]A. Gallegos, "The Dilemma of Extended/Five Year Programs," Journal of Teacher Education, Jan.-Feb. 1981, pp. 4-6.

In brief, successful implementation of extended preparation would require major commitment of economic and human resources to change at all levels.

Recommendation: Fund model teacher education programs.

States may wish to establish or encourage extended programs of preparation as described in the previous section. If no state wishes to do this, it should provide the fiscal support, initially on a trial basis, to guarantee that undergraduate programs of quality are developed.

Recommendation: Revise the program approval standards used by the state education agency.

The standards for teacher education programs influence directly what is included in the programs. With little disruption states could require:

1. Systematic Data Collection

   Data are needed on the quality of the teacher education candidates (e.g., SAT scores) and the graduates (e.g., NTE records); additionally, follow-up studies should be required for at least 1 year on placements in order to support a supply and demand model.

2. Require institutions to establish quality control procedures with clear lines of authority and responsibility.

   Institutions could be asked annually to submit to the state a profile of their graduates using the data collected through the previous recommendation. Institutions could be required to revise their programs based upon these data.

3. Establish an "essential" teacher education curriculum.

   This may be a very controversial recommendation. It would require consensus among faculty more committed to academic freedom than quality control not only on the courses to be taught but also on the topics to be addressed during the courses. Yet the argument for an essential curriculum is very strong. If there is no body of knowledge that the profession accepts as essential, can teaching be defended as a profession? This recommendation does not infer that every aspect of the teacher education

> curriculum must become part of a required program of study. Rather, it supports beginning the establishment of the "essentials" for study. For example, the study of the research findings on teaching effectiveness and school effectiveness could be required; the study of the works of Horace Mann, John Dewey, and B. F. Skinner might be optional (or required if there were a consensus).

States have, through laws, rules, and regulations, established programs of study including required methods courses, child or adolescent psychology, student teaching, etc. Now may be the time to define further what content should be addressed in these courses.

Extending Field Preparation

An alternative to extended preservice preparation is the concept of supported induction into the first years of teaching, during which the teacher is employed and concurrently continues training. The rationale for this approach is the same as for extended preservice programs. In addition, inherent in such a program is the recognition that there is a significant difference between beginning competence and professional excellence in teaching. Most important, this model takes into account research which shows that the first 3 years, and particularly the first, are critical in teacher development.[5]

Commonly called a "fifth year program," this approach creates a bridge between preservice and inservice education which allows extension of professional and academic studies and supports the linking of theory and practice. Many states have legislated such programs. In requiring attainment of a master's degree within a specified period, some states integrate performance-based evaluation and individual professional growth plans with requirements for continuing certification.

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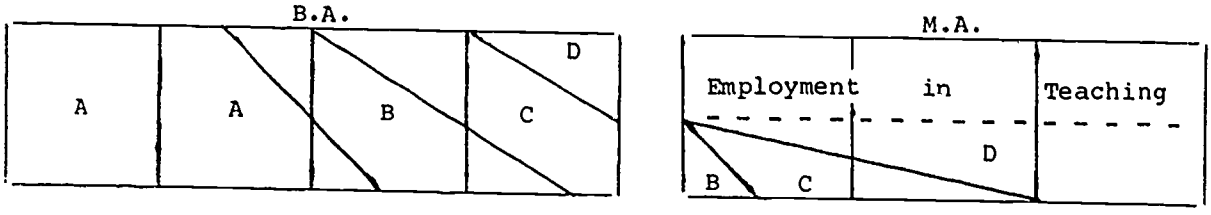
[5]V. Koehler, "The Future of Teacher Preparation and Research on Teaching," Theory into Practice, vol. 3, 1979.

The graphic description of this American Association of Colleges of Teacher Education (AACTE) proposed model shows that extended preparation into the first years of practice includes continuing preparation in both academic and professional studies.[6] The clinical component, which takes the form of a practicum in the preservice program, is extended on the job by evaluation and an individualized professional growth plan.



A. General Studies

B. Academic Major/Concentration

C. Professional Preparation

D. Clinical Component

The obvious issues are those of the complexity of the arrangements necessary to implement such a program in every district employing new teachers, as well as the costs of time and energy involved in creating and carrying out such a program, not only in the schools but also in the teacher education programs. Commitment to collaboration and support by schools, school committees, administrators, and teachers, and local and state agencies and professional groups is vital if such programs are to be undertaken.

It is important to differentiate between the role of the colleges and universities and that of the state education agency. The extent to which the state assigns to colleges and universities not only the responsibility for preparation but also the responsibility for licensure through approved

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[6] D. Scannel, et al, Draft Report Of The Task Force on Extended Programs, American Association of Colleges of Teacher Education, 1981.

programs, the less the influence the state has on the preparation of teachers. States which are moving toward the establishment of tests for licensure are establishing a unique, and non-ambiguous role for the state education agency.

Recommendation: Encourage colleges and universities to develop links with industry and public service agencies to provide job placement for teacher candidates in non-teaching positions.

Several areas of employment have attracted prospective teachers: social work, career with agencies such as the Boy Scouts or Girl Scouts, the YMCA or the YWCA, and major corporations which have staff development programs for their employees. College and university administrators need to be aware of these opportunities for their teaching candidates who are either unable to find or uninterested in pursuing educational careers.

In conclusion, it is important to note that the state role in each of the above recommendations varies from direct responsbility to one of concern or facilitation.

CHAPTER FIVE:

LICENSING QUALIFIED TEACHERS

The state education agency has the direct responsibility for certification and licensure procedures. While other institutions influence the state's decisions, where the "Buck Stops" is obvious.

Two major issues will be considered in this chapter: certification and testing programs for teachers.

Certification

Present certification policies are an historic hodgepodge of accumulated requirements based upon an assumption that "more is better." In most cases subject-specific certification requirements exist for state review of individual candidates. Also states have established Standards for Approved Programs that are used to grant approval of teacher education programs at colleges and universities. Such institutions then may recommend their graduates for certification without the state completing an individual review of each candidate. State education agencies have done an admirable job in developing and operating those systems with fairness and effectiveness.

Yet the certification systems suffer from many of the problems that beset the colleges and universities.

1. There is no evidence that the certification systems differentiate between persons who can teach successfully and those who cannot.

   There are numerous examples of persons who have been hired and taught successfully (as defined by the local school district)

who were not certified and equally numerous examples of certified teachers who were not successful in a teaching career.

2. Certification systems do not assure the public that persons who are certified are competent.

Although many people believe that there is or should be a direct relationship between certification and competence, officials in state education agencies recognize that certification procedures more clearly discriminate between those who are clearly not competent and those who may be competent. The systems serve to screen out clearly unacceptable candidates, because certification standards too often represent a minimum, not an "ideal" or maximum. This often occurs because the regulations and standards are usually developed through a process of broad involvement of interested educators. The final product becomes then a standard that is most acceptable to the greatest number of people.

3. Certification systems may be indirectly contributing to some of the schools' problems.

The present certification requirements have contributed to the shortage of math and science teachers. Schools could more easily use parttime, uncertified business and industrial personnel if certification rules were more flexible. If there were a more distinct correlation between certification and competence, it would be easier to support present certification systems, and not respond to reports that instructors from outside

the educational community can apparently teach as effectively as certified teachers.

Recommendation: A Certification Task Force should be established to develop model certification systems.

The following questions could be used to guide the work of the Task Force:

1. Are the certification systems and approved program standards conceptually consistent?
2. Do the certification systems require the demonstration of the knowledges and skills for effective teachers now being validated by educational researchers?
3. Are the certification systems responsive to a state's changing needs?
4. Are the certification systems based upon data showing that the systems facilitate the accomplishments of public schools' goals?

Testing

Many states are now moving to develop and use tests as some part of their certification or licensure systems. A recent national survey completed by the Council of Chief State School Officers reported that 20 states are moving to or already using tests.[1]

States are developing or using tests for three purposes:

1. To screen candidates for basic skills mastery.
2. To test a candidate's knowledge of content in that individual's certification field.
3. To assess teaching performance on-the-job.

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[1]Council of Chief State School Officers, unpublished manuscript, September, 1982.

Generally states are either developing their own criterion-referenced tests or using the Educational Testing Service developed NTE examinations, a new battery which will go into use this year.

A number of issues relate to the development and use of tests:*

1. Criterion-referenced or norm-referenced tests.

> Any state seeking to implement a teacher certification testing program must, at the outset, make a choice between criterion- or norm-referenced tests.
>
> National Evaluation Systems(NES)

NES is correct. A state must choose between a norm-referenced or criterion-referenced test. Which to use is the first and most important testing decision a state needs to make. The issues related to cost, legal implications, validity, reliability, and proficiency scores all vary depending upon which test is chosen. Simply stated, "norm-referencing is used to interpret a score of a person by comparing it with those of others,"[2] while "criterion-referencing is used to interpret a person's performance by comparing it to some specified behavioral criterion."[3]

Most persons who have considered this question recommend using a criterion-referenced test for mastery/certification purposes. Perhaps the strongest argument for a criterion-referenced test is the nature of the norm-referenced test. A norm-referenced test rank orders all persons who take the test and reports data by comparing one person's score to the percentage of people taking the test who scored higher or lower.

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*The issues discussed in this section are based upon a study prepared by the author on Basic Skill Mastery for the West Virginia State Department of Education.

[2]William H. Mehrens and Irvin J. Lehman, Standardized Tests in Education 3rd Edition, (New York: Holt, Rinehart, & Winston), p. 27.

[3]Ibid.

A state test for certification purposes is based on an assumption that certain skills or knowledges are essential and that the test is designed to discriminate between those who have demonstrated the skill or knowledge and those who have not.

Considering issues related to validity, reliability, and cut-scores also illustrates the differences between norm-referenced and criterion-referenced tests.

2. Validity - Reliability

A number of authors have dealt with the issues of validity and reliability. This report draws largely on the work of Mehrens and Lehman[4] for the following discussion.

> The degree of validity is the single most important aspect of a test. Validity is sometimes defined as truthfulness: Does the test measure what it purports to measure? For a test to be valid, or truthful, it must first be reliable. If we cannot get a bathroom scale even to give us a consistent weight measure, we certainly cannot expect it to be accurate. Note, however, that a measure might be consistent (reliable) but not accurate (valid). A scale may record weights as two pounds too heavy each time. In other words, reliability is a necessary but not a sufficient condition for validity. (Neither validity nor reliability is an either/or dichotomy; there are degrees of each.)

A test then has many validities, each dependent upon the specific purposes for which the test is used. Eventually the validity of any test is dependent upon how it is used in the local situation; therefore educators and personnel directors should, where feasible, conduct their own validity studies.

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[4] Ibid., pp. 42-83.

3. Proficiency Levels

Establishing proficiency levels, or passing scores, or standards, or mastery levels, or cut-off points, is one of the most important aspect of any basic skills mastery program and everyone should understand that there is no objective way to establish proficiency levels. There are only subjective ways. The best approach is the one that is most defensible. The two main types of judgments that can be used to set test performance standards are (1) judgments about the questions in the test; and (2) judgments about the mastery status of a sample of students taking the test.

Any state that establishes a testing program will likely have fewer candidates--the very purpose of a testing program is to assure minimum competency and this requires the setting of standards and elimination of some candidates. The question that a state must consider is "how many?"

Florida has reported a 25-percent decline overall and a 92-percent decline among minority students since instituting a basic skills requirement of 835 on the SAT, a score representing the 40th percentile. W. Timothy Weaver in an analysis of "The Talent Pool in Teacher Education"[5] reports that the average education major's combined scores on the SAT, ACT, and the National Longitudinal Study fall between the lower third and the 40th percentile for all students entering college. If a state were to set the proficiency level at the 40th percentile, as Florida has done, that would mean that more than half of the prospective teachers (the 40th percentile is the mean for all prospective college students) would be eliminated nationally; the percentage would vary from state to state.

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[5]Journal of Teacher Education, (May-June 1981), pp. 32-35.

Weaver's data on the SAT shows a continuing decline for the mean scores for prospective teachers on the SAT verbal or SAT mathematics.

	1976	1977	1978	1979	1980
SATV	405	400	396	392	389
SATM	431	426	422	420	418

Data for 1981 released by the Admissions Testing Program of the College Board indicates the decline may be stabilizing or even reversing itself:[6]

SATV - 391

SATM - 418

In the light of these statistics (and a criterion-referenced test will create similar issues), a state must consider, at least, the following questions in establishing any proficiency level:-

a. What will be the impact on the supply of prospective teachers if "x" standard is established?

b. What will be the impact on the collegiate programs for the preparation of teachers if "x" standard is established?

4. Impact on Minority Students

Educators cannot escape the fact that almost any screening approach (state tests, SAT scores, NTE examinations) will have a disproportionate impact on minorities. It is possible to discuss the problem of why academically talented minority students are not choosing to enroll in teacher preparation programs, but that is not the issue here. The issue is that the systems states are developing will clearly eliminate many minority persons from competing for teaching positions.

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[6]"National College-Board Seniors, 1981."

It may be important to emphasize that screening tests were developed in order to encourage equal opportunities for all citizens and that efforts to eliminate the use of tests for teachers would not in the long run support efforts of minorities who wish equal access to opportunities in America's society. Politically arbitrary alternatives may be even more unfair.

> Historically, testing arose out of the desire to break down arbitrary barriers of class, race, and nationality; it was part of the democratization of society at the turn of the century. Better than any other instrument available to teachers, then or now, tests would cut through the unpredictable circumstances of a child's cultural background to the relatively stable aptitudes on which education builds. The early testers believed that tests would open doors to disadvantaged people, not close them. And that, by and large, is what tests have done, enabling millions of people from poor or deprived backgrounds to develop their abilities better than the circumstances of birth would otherwise have allowed. As tests disappear, displaced by political requirements imposed on school and workplace, arbitrary barriers return; these barriers are new ones, perhaps, but no less unproductive and unjust.[7]

5. Legal Concerns

No state wishes to establish a testing procedure which will be open to legal challenges. Actually, any state which establishes a testing program will undoubtedly be sued, sooner or later, and probably sooner. The concern is not whether a legal challenge will appear, but rather how defensible are the state's procedures that were used in developing the test and setting the passing scores.

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[7]R. J. Herrnstein, "IQ Testing and the Media," The Atlantic, August 1982, p. 74.

Florida, one of the first states to establish basic skills public school tests, was also one of the first states to be sued. The dominant legal issues (in 1970) were:

a. Are the tests valid?

b. Are the tests reliable?

c. Are the tests culturally biased?

d. Was there enough lead time provided students before the requirement was imposed?

The courts allowed Florida to continue its testing program for diagnostic purposes but denied it the authority to refuse any student a graduation diploma until there was adequate lead time.

More recently, a South Carolina test was dismissed by the courts because of the lack of an established standard.

Courts in recent years have waivered between a strict interpretation and a more loosely constructed view. No state can safely predict how a court will rule if the state is sued. But, the state can adopt procedures that are most defensible.

The question about whether norm-referenced or criterion-referenced tests should be used relates to these legal issues. A criterion-referenced test begins with state objectives and test items are developed from them. Such tests have content validity and are easily defensible.

6. Costs

The last major issue to consider is "What will the various options cost?"

Clearly, the use of standardized norm-referenced achievement tests will cost little. The student taking the test pays a fee.

South Carolina has in the past few years developed basic skills tests in reading, writing, and mathematics as well as content-specific criterion-referenced tests and a performance assessment test. The costs of that state's test development efforts were as follows:

- Planning, Development, Evaluation Associates developed for South Carolina basic skills tests in three areas for $75,000. A second grant of $75,000 was also given to support a year of field tests.
- Educational Testing Service worked with South Carolina on a $50,000 contract to make the data from its 18 content areas specific to South Carolina. An additional grant of $10,000 was given to ETS to determine the extent to which individual-score reporting helps the student and the state.

In addition, National Evaluation Systems (NES) estimates the cost of developing a single basic skills examination at $30,000.

Another independent estimate from a test constructor is that a single basic skills mastery test for a specific state could be designed for between $25,000 and $35,000.

The National Teacher Examination charges a candidate $27 to take an examination, and an additional $5 to include a report of a specific state profile.

Also, states may consider using a norm-referenced test and having the items analyzed and assigned to state objectives, thereby creating a criterion-referenced test. No estimates are available on the costs of such an analysis. However, Edward Masonis, ETS, reports that his organization is prepared to work with a state to create state profiles for persons using the NTE examinations. This cost should be less than that of developing a specific statewide criterion test.

The above list of considerations related to the selection and establishment of tests. There are are additional issues to consider.

- The persons who select the test items will begin to dictate the teacher education program curriculum.
- Tests will most likely add another screen to the certification process by eliminating more clearly inappropriate candidates; tests will not, however, identify competent teachers. The basic problem will still remain.
- Tests may reduce the collaborative efforts developed in the past few years by various educational groups. Working together on mutual educational issues will become less important as more and more people spend their time reviewing test items.
- Educators are becoming too reliant on test developers for technical assistance about testing issues. Few states have sufficient staff who have the needed technical background in psychometrics. When this happens, the test developers begin to influence policy decisions at the state level.

Recommendation: A Study of Issues Related to the Assessment of Educational Personnel should be completed.

The issues are not state specific. An organization such as NEREX could undertake the study and provide assistance to all states in the region. This study should be coordinated with the study of certification systems. It is clearly possible that effective testing programs might eliminate or drastically alter present certification systems.

CHAPTER SIX:

RETAINING QUALIFIED TEACHERS

The phrase "retain and continuously develop" has been included in the original problem statement because there are teacher education issues at the inservice level. First, assuming that the teachers are competent, how does one retain those teachers over the length of their potential teaching careers and equally important how do these teachers grow professionally?

Retaining

Some answers to this dilemma are possible but not likely to occur: increase salaries significantly, alter working conditions, and/or increase the rewards and status of teaching. Or, the solution may lie in changing long-established practices: instituting differentiated staffing patterns, using shared teachers, allowing joint occupations--an English teacher and a newspaper reporter, both parttime positions.

It is also possible that the educational system might be better served by a corps of dedicated teachers who commit themselves to spending only a limited number of years in teaching, perhaps 3 to 5 years. This possibility would alter approaches to recruiting, preparing, and licensing teachers. But it could provide a constant source of young, vigorous teachers, a population now missing in large number because of the nation's economic problems.

In reality "retaining" may be a lesser issue than preparing and employing competent teachers.

Two other issues impact on the retaining of teachers. They are tenure and recertification.

1. Tenure

An often discussed topic related to teacher retention is tenure. Critics of tenure argue that it protects incompetent or barely competent teachers from dismissal. Proponents maintain that tenure protects teachers from arbitrary and politically motivated decisions by school administrators and local boards of education.

While it is true that tenure laws are a state responsibility, often the result of specific legislation, it is also true that few states (particularly those in the Northeast where teacher organizations are well organized and opposed to any elimination of tenure) are likely to change tenure laws in the near future.

2. Recertification

Many states have certification renewal systems that require continued professional involvement throughout a teacher's lifetime. Periodically, every five years, for example, a teacher needs to renew his/her certificate by continued preparation, e.g., college courses, inservice programs, etc. States that have such programs can require teachers to participate in staff development programs throughout their careers.

States without recertification policies may find it difficult to establish such programs where existing life certification procedures have been established and have the support of the organized profession. Clearly states where certification renewal policies exist can exert a major influence on state staff development activities.

Continuous Development

It is also necessary to provide some way for employed teachers to grow professionally and personally. This is the second issue--to provide opportunities for staff development for employed teachers. A major emphasis in teacher education in recent years has been on staff development or inservice education. Many states have during this time developed Inservice State Plans.

Current staff development efforts are too commonly criticized for their inservice programs and the almost total lack of data to recommend any staff development program as being superior to any other.

An overriding issue that permeates any discussion of staff development programs is the problem of which agency should have the primary responsibility for such programs. In most situations the local school district, with significant involvement of the professional association, has the major responsibility. The state role has been one of coordinating, assisting, and occasionally funding these programs. Since data on effective programs does not exist, the state might assume the role of creating these needed data sources.

Recommendation: State education agencies should support the development of data collection procedures on effective staff development programs.

This clearly is an appropriate state role; it recognizes the state's need to monitor the programs offered in the educational system but clearly allows the local school districts to retain their autonomy in developing and offering programs. This data collection system could also be used to provide the beginnings of an evaluation system for staff development.

Florida recently awarded a contract to evaluate its state-supported teacher centers. The data the contractor is being asked to collect in response to the following questions could be the conceptual basis for a state data collection system:

1. What is a Teacher Education Center (TEC)?

2. What is the nature of governance of TECs? What differences exist among the TECs with respect to governance? How and by whom are TEC Council members recommended for appointment? What is the length of a term? What is the influence of the teachers' union upon TECs?

3. What agencies are included in the collaborative efforts of TECs? What is the nature of such collaboration?

4. What procedures are used to assess staff development needs? By whom are these procedures implemented? Are they primarily formal or informal? What evidence exists to illustrate and/or document needs assessment? To what extent does the master inservice plan reflect the needs assessment?

5. What programs are delivered through TECs? How are potential participants notified of program offerings? To what extent are they knowledgeable of program offerings? To what extent does program delivery reflect use of the needs assessment?

6. To what extent do TECs offer programs leading to certification or recertification? What indicators of quality exist by which such programs can be evaluated? What is the quality of such programs?

7. How does the TEC model compare with other staff development models with respect to purpose, implementation, funding, and accountability?

8. How are funds allocated to TECs used by school districts and universities? In the case of school districts, what are the object categories and purposes? In the case of universities, how much is allocated to them and how much is consumed by colleges of education?

9. What has been the impact of the TEC. . .

   On the behavior of teachers, administrators, and non-teaching personnel?

   On student learning?

On preservice and graduate teacher education programs?

On tenure and promotion decisions?

These questions are not easy to answer but they are basic to understanding any staff development activities.

Recommendation: States should offer or continue to offer staff development opportunities through existing regional service centers.

Many states already have regional service centers whose offerings include staff development programs. Although these were not established to provide inservice programs, in many cases they have offered successful programs. States might use these centers as a means to deliver state-mandated inservice programs, such as the introduction of a new biology curriculum.

It is interesting to consider the experience of two states that have established regional teacher centers. Florida established its centers in 1973. During the past year there was a movement to eliminate state support of the centers. The evaluation contract has been awarded to assist the state in making this decision. Clearly the centers are not an uncontested success.

California, on the other hand, through an appropriation in the Governor's executive budget, is presently establishing 15 Teacher Education and Computer Centers with $9,750,000 in newly appropriated state money. Modeled on the Federal Teacher Center legislation, the centers provide inservice programs and centers for computer software and hardware and coordinate programs with institutions of higher education, businesses, and industries. Note that this proposal was included in the Governor's budget, not established through specific legislation. Seven dollars per pupil will be available to the

centers to support staff development programs. The primary focus for these programs will be secondary teachers ("retain and continuously develop") with a major priority being given to the training of math and science teachers.

As the Northeast considers the question of what is the appropriate state role in supporting staff development programs, it is interesting to note that the longest existing state program, Florida's, may be eliminated and that the latest effort, California's, was established through the Governor's initiative not through specific legislation.

CHAPTER SEVEN:

CONCLUSION

The primary focus of the recommendations in this report has been on actions states might take. In addition, the document provides regional organizations including the Northeast Regional Exchange with guidance in planning and implementing future activities that will assist the State Departments of Education they serve.

These include:

1. The identification and dissemination of relevant research and research synthesis on issues related to Teacher Education and Teaching.
2. The identification and dissemination of studies and/or comparative studies about Certification and Program Approval Systems; Assessment procedures for educational personnel; Staff Development Programs for educational personnel; and legislation relevant to teacher education.
3. The development and implementation of a regional data collection model on teacher supply and demand.

It is important to recognize how strongly the public supports the nation's educational systems. Dr. George H. Gallup, reporting the results of the "14th Annual Gallup Poll of the Public's Attitude Toward the Public Schools," found "an amazing amount of agreement" with "every major group in the population" placing education first. Of those polled, 84 percent picked "developing the best educational system in the world" as very important in determining America's strength in the future. "Developing the most efficient

industrial system in the world" was rated very important by only 66 percent while "building the strongest military force in the world" was very important to only 47 percent.[1]

Too often in the past educators have had to compromise when questions of quality arose. Political pressures, economic considerations and educational realities have mitigated or eliminated many promising efforts. Today's environment may not be an ideal setting for a public commitment to quality programs for teachers, but as a society and as a profession the delay has had effects on America's educational systems that will last for years. During the past 20 years, continued improvements in teacher education have invariably focused on raising "minimums." Should not states, colleges and universities, school districts, and professional associations begin now to define and implement their "best" programs related to teacher education? The potential for improvements in such approaches can be enormous, yet the differences are only between asking:

What is the best that <u>can</u> be done? and

What is the best that <u>should</u> be done?

In conclusion, this paper has considered a number of issues related to teacher education. The report has been prepared in order to sharpen the focus on the issues and provoke discussions about possible futur actions. In considering future policy actions it may be helpful to reflect on the words of Robert Frost:

> We dance around in a ring and suppose,
> But the Secret sits in the middle and knows.[2]

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[1]Albert Shanker, "Where We Stand," <u>The New York Times</u>, September 12, 1982, p. E9.

[2]Robert Frost, <u>A Swinger of Birches</u>, (Stemmer House Publishers, Inc., Owings Mills, Maryland), p. 48.

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